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NORWEGIAN AGRICULTURE

By Claudia Thomson*

Norway is in reality a huge rock, parts of which through eons of time have developed forests and soil. Only 3 percent of the surface is cultivable, and a large part of even this 3 percent required arduous labor before it could be made to produce agriculturally. Known Norwegian agriculture dates farther back than 1,000 B. C. In 1800, about 80 percent of the total population of 883,487 derived a livelihood from the soil. At present fully 40 percent of the population of 2,907,000 still lives by agriculture and the allied industries, forestry and fishing. A visitor to Norwegian agricultural areas finds the agriculture of the country unique and the philosophy of the farm people refreshing.

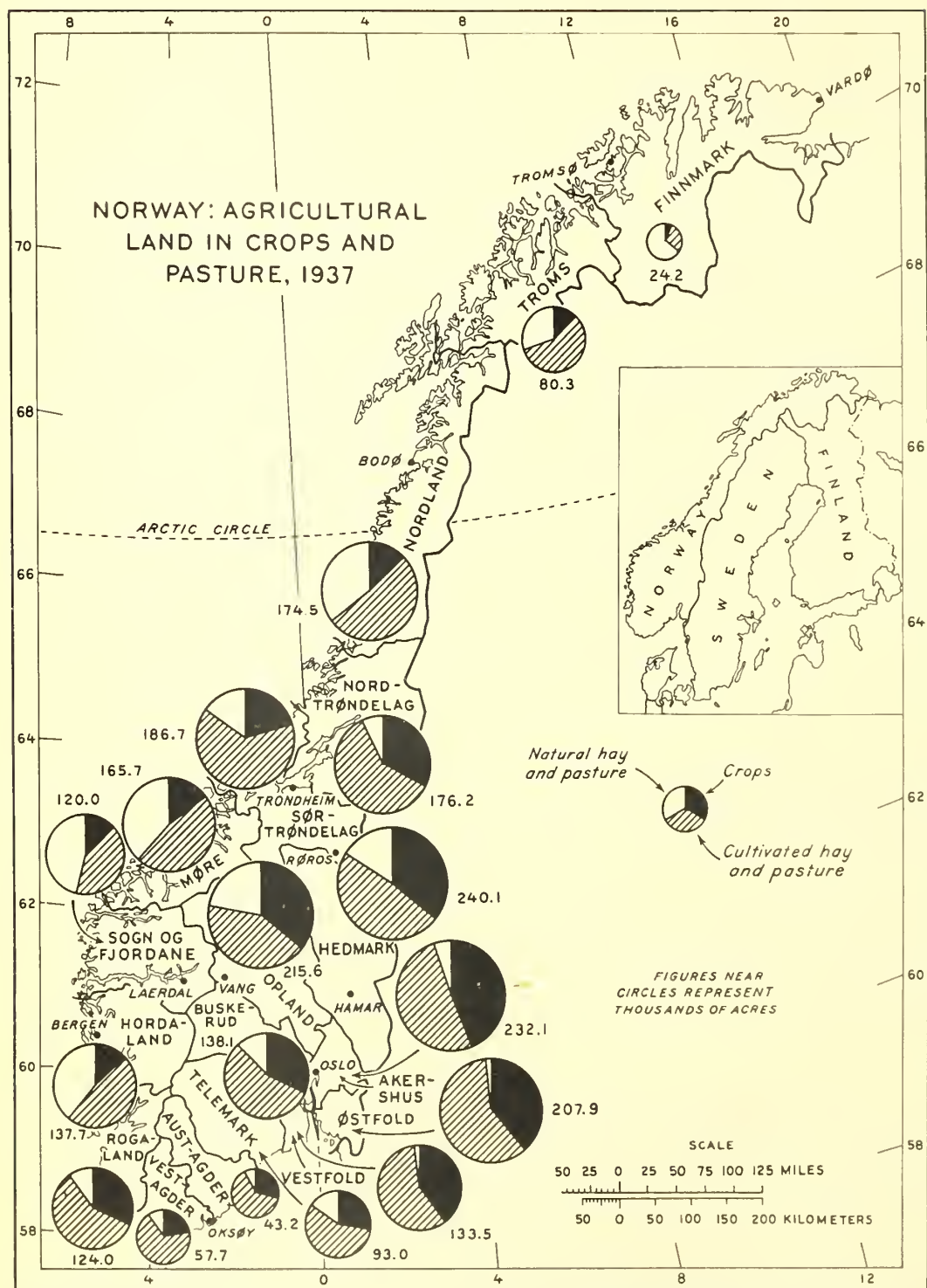
PHYSICAL BASIS OF NORWEGIAN AGRICULTURE

LOCATION AND SURFACE

Norway is located between 58° and 71° north latitude, or in almost exactly the same latitude as Alaska, with nearly one-half of the length of the country north of the Arctic Circle. Norway lies directly east of the southern half of Greenland. The total area, exclusive of Spitzbergen, is about 125,000 square miles (80 million acres) and is slightly smaller than the two States of Minnesota and Iowa. About one-fourth of the area of the country is made up of 150,000 islands sprinkled along the west coast. These islands range in size from one just large enough for the nest of a seafoal to one in the Lofoten group north of the Arctic Circle of 870 square miles. About one-fourth of the population lives on these islands.

The length of the country north and south in a straight line is about 1,100 miles. If the innumerable indentations and fjords of the coast line are followed, the length is more nearly 1,700 miles. From east to west the country is about 250 miles wide in the widest portion in the southern part of the country, while the northern part ranges between 60 and 80 miles in width.

* Bureau of Agricultural Economics. This article, first published in the *Journal of Geography*, May 1936, has been expanded and brought up to date with the permission of the editor of the *Journal*. The statistical tables were compiled by Elizabeth M. Styles, Bureau of Agricultural Economics.



U.S. DEPARTMENT OF AGRICULTURE

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BUREAU OF AGRICULTURAL ECONOMICS

Figure 1.

The uniqueness of Norwegian agriculture is caused by the geographic location and ruggedness of the country; and, if viewed only from the standpoint of arable land, agriculture might not at first seem important. Norway is a mountainous country, whose coast line stands out in bold relief, with cliffs rising sheer from the sea in most places about 1,500 feet. Peaks in the Kjølén Range are between 5,000 and 6,000 feet high, with a few more than 6,000 feet. The slopes are steep, and all the land is rugged, as may be seen from the following tabulation.

| Description | Percent |
|--|---------|
| Bare mountains of rock | 60 |
| Forests of pine, spruce, and birch | 21 |
| Grazing land high on mountain plateaus | 8 |
| Lakes | 4 |
| Ice fields | 4 |
| Agricultural land (see map page 66) | 3 |

CLIMATE AND RAINFALL

No other country in the world with a similar latitude has such a temperate climate. This is due to the moderating effect of the Gulf Stream Drift, without which much of Norway would be uninhabitable.

TABLE 1. *Temperature in Norway, by months,
average 1861-1920 and year 1937*
[Fahrenheit]

| YEAR AND MONTH | WEST-COAST AREA AT- | | | | | | EAST SIDE AREA AT- | | | |
|----------------------|---------------------|----------|----------------|----------|----------|----------|--------------------|----------|----------|----------|
| | BERGEN | LAERDAL | TROND- HEIM | BODØ | TROMSØ | VARDØ | RØROS | VANG | OSLO | OKSØY |
| 1861-1920 : Degrees: | Degrees: | Degrees: | Degrees: | Degrees: | Degrees: | Degrees: | Degrees: | Degrees: | Degrees: | Degrees: |
| January | 34.5 : | 29.5 : | 27.3 : | 28.4 : | 26.2 : | 22.1 : | 12.6 : | 18.1 : | 22.3 : | 32.9 |
| February | 34.2 : | 30.0 : | 27.9 : | 27.0 : | 24.8 : | 21.4 : | 14.0 : | 19.0 : | 23.4 : | 32.4 |
| March | 35.6 : | 33.6 : | 30.6 : | 28.2 : | 25.9 : | 23.5 : | 18.7 : | 26.1 : | 28.4 : | 33.6 |
| April | 41.5 : | 42.3 : | 38.3 : | 35.1 : | 31.5 : | 29.5 : | 29.1 : | 37.8 : | 38.7 : | 39.9 |
| May | 48.2 : | 50.5 : | 45.9 : | 42.1 : | 37.2 : | 35.1 : | 39.0 : | 47.5 : | 49.6 : | 48.2 |
| June | 54.5 : | 58.1 : | 53.6 : | 49.8 : | 45.5 : | 42.4 : | 48.6 : | 57.0 : | 58.5 : | 56.1 |
| July | 57.4 : | 61.0 : | 57.2 : | 54.3 : | 51.3 : | 47.7 : | 52.2 : | 59.7 : | 62.2 : | 60.1 |
| August | 56.7 : | 58.3 : | 55.4 : | 53.1 : | 49.8 : | 47.8 : | 49.6 : | 56.3 : | 59.4 : | 59.0 |
| September | 52.2 : | 50.5 : | 48.9 : | 46.6 : | 43.9 : | 43.2 : | 42.4 : | 48.7 : | 51.3 : | 54.1 |
| October | 45.5 : | 42.3 : | 40.5 : | 39.0 : | 36.0 : | 34.9 : | 32.4 : | 38.3 : | 41.0 : | 46.8 |
| November | 39.4 : | 35.2 : | 33.1 : | 32.7 : | 30.0 : | 28.2 : | 21.9 : | 28.0 : | 30.7 : | 39.9 |
| December | 35.6 : | 30.6 : | 27.7 : | 28.4 : | 26.6 : | 24.1 : | 14.4 : | 19.9 : | 24.4 : | 35.1 |
| Average | 44.6 : | 43.5 : | 40.5 : | 38.7 : | 35.7 : | 33.3 : | 31.2 : | 38.0 : | 40.8 : | 44.8 |
| 1937 | | | | | | | | | | |
| January | 37.8 : | 32.4 : | 29.1 : | 32.7 : | 29.7 : | 27.7 : | 16.5 : | 22.8 : | 26.2 : | 34.2 |
| February | 34.0 : | 24.6 : | 23.5 : | 23.9 : | 22.6 : | 22.6 : | 8.8 : | 17.6 : | 22.5 : | 29.5 |
| March | 34.0 : | 30.7 : | 28.8 : | 27.9 : | 25.0 : | 24.8 : | 17.1 : | 24.8 : | 27.3 : | 29.3 |
| April | 46.9 : | 48.2 : | 44.8 : | 44.4 : | 38.7 : | 35.1 : | 35.1 : | 40.5 : | 42.8 : | 40.1 |
| May | 52.5 : | 55.0 : | 51.8 : | 47.7 : | 43.2 : | 39.6 : | 46.9 : | 51.6 : | 53.4 : | 50.2 |
| June | 53.8 : | 55.8 : | 54.9 : | 51.8 : | 49.8 : | 47.7 : | 50.4 : | 54.9 : | 56.3 : | 54.9 |
| July | 60.3 : | 64.9 : | 63.0 : | 62.8 : | 59.5 : | 50.9 : | 60.3 : | 63.7 : | 65.5 : | 62.2 |
| August | 61.9 : | 64.2 : | 61.5 : | 58.6 : | 55.0 : | 54.9 : | 57.0 : | 63.1 : | 65.3 : | 65.1 |
| September | 52.7 : | 50.0 : | 50.0 : | 49.1 : | 45.7 : | 45.9 : | 44.1 : | 50.2 : | 52.7 : | 56.1 |
| October | 50.5 : | 47.8 : | 45.9 : | 44.6 : | 40.6 : | 39.7 : | 40.5 : | 44.2 : | 46.8 : | 51.8 |
| November | 39.4 : | 33.1 : | 32.7 : | 36.0 : | 32.0 : | 30.9 : | 22.8 : | 27.7 : | 31.8 : | 40.5 |
| December | 33.3 : | 26.1 : | 24.3 : | 27.1 : | 25.7 : | 25.0 : | 9.5 : | 17.4 : | 21.9 : | 29.3 |
| Average | 46.4 : | 44.4 : | 42.5 : | 42.2 : | 39.0 : | 37.1 : | 34.1 : | 39.9 : | 42.7 : | 45.3 |

¹ Estimates.

Compiled from *Statistisk Årbok*.

Equable temperatures prevail. The January temperature along Norway's west coast does not vary greatly from 32° F., and the July temperature in the same area is about 53° F. The January temperature in the eastern area is lower than that of the coast, and the July temperature is higher. February is the coldest month, and July and August are the warmest months. See table 1.

The rainfall is heavy along the west coast of Norway, especially the southern part where the altitude is greatest. There the annual precipitation is often more than 70 inches, while farther north it is between 35 and 40 inches. In the vicinity of Bergen, it rains about 200 days during the year, though the sun may shine during some of those 200 days. Showers and sunshine are often intermittent, and during the summer farm work is carried on between the showers. Over the mountains on the eastern slopes, the annual precipitation is between 25 and 30 inches.

TABLE 2. *Precipitation in Norway, by months,
average 1876-1925 and year 1937*

| YEAR AND MONTH | WEST COAST AREA AT | | | | | | EAST SIDE AREA AT | | | |
|----------------------|--------------------|---------|---------------|--------|--------|--------|-------------------|-------------------|--------|--------|
| | BERGEN | LAERDAL | TROND HEIM | BODÓ | TROMSÓ | VARDÓ | RÓROS | VANG ¹ | OSLO | OKSÓY |
| Average | Inches | Inches | Inches | Inches | Inches | Inches | Inches | Inches | Inches | Inches |
| 1876-1925 | | | | | | | | | | |
| January | 7.9 | 2.1 | 3.5 | 2.8 | 3.9 | 2.7 | 1.3 | 1.0 | 1.5 | 2.6 |
| February | 5.7 | 1.4 | 2.7 | 3.4 | 3.4 | 2.6 | 1.0 | .8 | 1.2 | 2.2 |
| March | 5.4 | 1.1 | 2.3 | 2.4 | 3.0 | 2.1 | 1.0 | 1.1 | 1.5 | 2.6 |
| April | 3.7 | .5 | 1.8 | 1.9 | 2.1 | 1.6 | .8 | 1.1 | 1.5 | 1.9 |
| May | 4.1 | .9 | 1.5 | 2.7 | 2.1 | 1.4 | 1.2 | 1.7 | 1.9 | 2.0 |
| June | 3.5 | 1.2 | 1.7 | 2.6 | 2.2 | 1.5 | 1.9 | 2.0 | 2.0 | 1.6 |
| July | 4.9 | 1.7 | 2.3 | 2.7 | 2.3 | 1.8 | 2.6 | 2.9 | 3.0 | 2.7 |
| August | 6.9 | 1.9 | 3.0 | 2.0 | 2.6 | 2.0 | 2.7 | 3.3 | 4.0 | 3.9 |
| September | 8.0 | 2.2 | 3.2 | 4.3 | 4.7 | 2.4 | 1.8 | 1.8 | 2.3 | 3.0 |
| October | 8.2 | 1.7 | 3.5 | 4.6 | 4.3 | 2.5 | 1.5 | 2.1 | 2.8 | 4.0 |
| November | 7.4 | 1.8 | 3.1 | 4.0 | 4.3 | 2.5 | 1.1 | 1.2 | 2.0 | 3.6 |
| December | 7.7 | 1.7 | 2.6 | 2.2 | 3.0 | 2.6 | 1.0 | 1.5 | 1.9 | 3.9 |
| Average | 73.4 | 18.2 | 31.2 | 35.6 | 37.9 | 25.7 | 17.9 | 20.5 | 25.6 | 34.0 |
| 1937 | | | | | | | | | | |
| January | 4.5 | 2.3 | .6 | 2.9 | 2.9 | 1.0 | .5 | .9 | 1.8 | 4.8 |
| February | 3.1 | .2 | .2 | 1.1 | 2.6 | 2.8 | .5 | .7 | 1.5 | 5.2 |
| March | 1.1 | .3 | .8 | .9 | 1.3 | 2.1 | .6 | 1.4 | 1.6 | 1.5 |
| April | 1.6 | .3 | 1.6 | 1.2 | .8 | .5 | .6 | 2.5 | 2.2 | 2.9 |
| May | 3.8 | 1.7 | 1.7 | 3.1 | 4.2 | .7 | 1.1 | 2.8 | 2.9 | 1.8 |
| June | 10.1 | 1.9 | 2.2 | 3.7 | 3.6 | 2.2 | 3.2 | 2.9 | 3.1 | 3.0 |
| July | 3.0 | 1.2 | 1.4 | .9 | .9 | .6 | 3.2 | 1.7 | 1.4 | .6 |
| August | 2.2 | .4 | .8 | 2.6 | 1.9 | 1.2 | .6 | 1.2 | 1.3 | .6 |
| September | 14.7 | 2.8 | 3.9 | 4.9 | 4.1 | 2.3 | 2.7 | 3.8 | 4.8 | 3.7 |
| October | 5.8 | 1.8 | 3.2 | 8.4 | 5.7 | 1.8 | .7 | 1.2 | 1.3 | .9 |
| November | 3.1 | .6 | 3.4 | 6.9 | 5.7 | 2.3 | 1.1 | .5 | .5 | 1.5 |
| December | 3.2 | .4 | .8 | 2.5 | 3.1 | .9 | 1.3 | 1.8 | 3.0 | 2.2 |
| Total | 56.2 | 13.9 | 20.6 | 39.1 | 36.8 | 18.4 | 16.1 | 21.4 | 25.4 | 28.7 |

¹ Average 1876-1925 at Hamar. Station moved from Hamar to Vang April 30, 1934

² Estimates

Compiled from *Statistisk Årbok*.

FARMING AREAS

The farming areas in this rugged, far-northern country are widely scattered and made up of small irregular tracts. The best and most fertile areas are found along rivers, lakes, and fjords. A Norwegian farm is located wherever a sufficient amount of soil has collected to produce vegetation. The bit of land may be a

relatively level projection on a precipice, a small clearing between boulders, a spot on a sidehill requiring steps for access, or one of the many islands off the coast. The exception to these small and irregular tracts is the farming area in the eastern part of the country extending north of Oslo in an expanse of about 450 square miles (288,000 acres) of relatively level land.

In general, agricultural land in Norway is thought of as of two distinct types - that of the West Side and that of the East Side - where methods of farming and farm living have been adapted to the differing geographic features of the country.

The West Side - or west-coast farming area - is characterized by smaller and usually more irregular farms; a more prevalent combination of farming and fishing; fewer grain crops; smaller farm equipment; and usually smaller, though comfortable, farm homes. Much of the farm work, particularly in the southern part, is done by hand, especially haying on small places and on mountainsides. Farther north in the area of Trondheim, horse-drawn mowing machines and rakes are used. Every spear of hay is saved from the small hay-producing areas. The abundant rainfall has necessitated the stringing of wires on temporary stays in the field or on the mountainside where hay is harvested, and the hanging of hay on these wires to cure.



Figure 2.-Typical farm land near Bergen on the West Side of Norway. In the foreground is an experiment station. Note the crushed-rock road and the electricity-distribution lines, illustrative of those found throughout the country.



Figure 3.-Haying time on an East Side farm in Norway. Abundant rainfall necessitates this method of curing hay.



Figure 4.-Modern 50-acre farm on the East Side of Norway. The buildings and the methods used on this farm are up-to-date in every respect.

Many of these West-Side farms are island farms, and boats are needed as a mode of travel and communication with the mainland. Also, this area has numerous indentations of the sea, making boat travel far inland possible. Many boats used by the farmers are rowboats, but some are propelled by motor.

The East Side - or interior farming area - is characterized by larger farms with more grain crops; greater production of fruits and truck crops; a prevalent combination of farming and forestry; the use of more and larger farm equipment, including a few tractors; and larger and more comfortable homes. The usual mode of travel is by horse-drawn vehicle.

In all parts of this area the soil is thin and contains a high percentage of sand and clay. A great deal of artificial fertilization is necessary, but Norway produces large quantities of fertilizers, synthetic nitrate and fish meal predominating. Labor through the years has cleared these tracts of forests, boulders, and rocks, though on many farms rocks are still a formidable obstacle. The growing season of about 4 months is enhanced by the fact that the northern two-thirds of Norway is in the "land of the midnight sun" and experiences a summer of continual daylight. In the southern part of the country the day is long, and to the southernmost point twilight lasts all night during the summer.

There are about 300,000 farms in all of Norway, and from these approximately one-third of Norway's present population of 2,907,000 derives a livelihood. About 80 percent of these farms are 10 acres or less in size. Fifty acres is a large farm, and there are only about 300 farms more than 100 acres in size.

ADAPTATION OF AGRICULTURE TO ENVIRONMENT

CROPS

The scarcity of agricultural land calls for highly intensive agricultural methods. Intensive methods, together with an abundance of moisture and a temperate climate, result in high yields of all field crops and the production of practically all truck crops and many fruits. In the northernmost Districts, especially Finnmark and Troms, production is limited to the hardier crops, such as potatoes, barley, turnips, kohl-rabi, and in some years small quantities of wheat, rye, and oats. Vegetables, such as cabbage, carrots, celery, and beets, are also grown. Potatoes always mature in these northern Districts, and in favorable seasons barley ripens to the northernmost point of the country.

By far the greater part of Norwegian farming, however, is done in the Districts south of the Arctic Circle, especially in the relatively level area north of Oslo on Norway's East Side.

Expansion in the area devoted to grains began during the World War to provide sustenance, as far as possible, for the population. More laborers were employed on farms; farming was more intensive; and production increased in spite of the limited agricultural land in the country. In the years since the World War

TABLE 3. Acreage, production, and yield per acre of grains and potatoes in Norway, 1909, 1917-1938, and 1937 by Districts¹

| YEAR AND DISTRICT | WHEAT | | | RYE | | | BARLEY | | | OATS | | | POTATOES | | |
|-------------------|---------|-----------------|----------------------|---------|-----------------|----------------------|---------|-----------------|----------------------|---------|-----------------|----------------------|----------|-----------------|----------------------|
| | ACREAGE | PRODUC- TION | YIELD PER ACRE | ACREAGE | PRODUC- TION | YIELD PER ACRE | ACREAGE | PRODUC- TION | YIELD PER ACRE | ACREAGE | PRODUC- TION | YIELD PER ACRE | ACREAGE | PRODUC- TION | YIELD PER ACRE |
| 1909 ³ | 1,000 | 1,000 | Bush-- | 1,000 | 1,000 | Bush-- | 1,000 | 1,000 | Bush-- | 1,000 | 1,000 | Bush-- | 1,000 | 1,000 | Bush-- |
| 1917 ³ | acres | bushels | els | acres | bushels | els | acres | bushels | els | acres | bushels | els | acres | bushels | els |
| 1918 ³ | 12 | 313 | - | 37 | 1,011 | - | 89 | 2,596 | - | 264 | 8,804 | - | 103 | 22,084 | - |
| 1919 ³ | 21 | 501 | 23 | 27 | 573 | 22 | 117 | 4,302 | 37 | 254 | 13,342 | 52 | 113 | 31,090 | 275 |
| 1920 ³ | 41 | 1,085 | 27 | 36 | 1,046 | 29 | 156 | 5,873 | 38 | 342 | 18,907 | 55 | 130 | 28,656 | 220 |
| 1921 ³ | - | 950 | - | - | 910 | - | - | 5,053 | - | - | 16,044 | - | - | 36,426 | - |
| 1922 ³ | - | 597 | - | - | 807 | - | - | 4,704 | - | - | 14,751 | - | - | 29,587 | - |
| 1923 ³ | - | 585 | - | - | 884 | - | - | 3,645 | - | - | 12,304 | - | - | 25,767 | - |
| 1924 ³ | - | 641 | - | - | 864 | - | - | 4,437 | - | - | 13,708 | - | - | 32,969 | - |
| 1925 | 25 | 571 | 23 | 27 | 791 | 29 | 124 | 3,395 | 27 | 255 | 9,164 | 36 | 114 | 26,490 | 232 |
| 1926 | 21 | 485 | 23 | 25 | 655 | 26 | 136 | 4,645 | 34 | 230 | 10,640 | 46 | 117 | 23,034 | 197 |
| 1927 | 22 | 490 | 22 | 22 | 614 | 28 | 139 | 5,180 | 37 | 241 | 12,048 | 50 | 117 | 34,500 | 296 |
| 1928 | 22 | 586 | 27 | 23 | 647 | 28 | 143 | 5,125 | 36 | 241 | 13,332 | 55 | 119 | 32,870 | 276 |
| 1929 | 25 | 605 | 25 | 23 | 606 | 26 | 150 | 4,672 | 31 | 240 | 12,665 | 53 | 123 | 22,232 | 180 |
| 1930 | 28 | 798 | 28 | 18 | 497 | 27 | 149 | 5,134 | 35 | 246 | 12,680 | 52 | 125 | 34,933 | 280 |
| 1931 | 30 | 750 | 25 | 18 | 538 | 29 | 132 | 4,533 | 34 | 239 | 12,146 | 51 | 114 | 33,070 | 289 |
| 1932 | 29 | 592 | 21 | 15 | 378 | 25 | 138 | 4,922 | 37 | 237 | 13,621 | 57 | 117 | 28,144 | 241 |
| 1933 | 28 | 755 | 27 | 16 | 438 | 28 | 142 | 4,597 | 32 | 242 | 12,416 | 51 | 120 | 35,890 | 299 |
| 1934 | 46 | 1,204 | 26 | 15 | 395 | 27 | 147 | 5,307 | 36 | 226 | 12,145 | 54 | 120 | 29,415 | 245 |
| 1935 | 59 | 1,869 | 32 | 15 | 483 | 31 | 153 | 5,667 | 37 | 215 | 12,532 | 58 | 123 | 33,674 | 275 |
| 1936 | 75 | 2,094 | 28 | 15 | 425 | 29 | 149 | 5,273 | 35 | 210 | 11,797 | 56 | 127 | 34,754 | 273 |
| 1937 | 79 | 2,497 | 32 | 15 | 443 | 30 | 149 | 5,933 | 40 | 211 | 12,984 | 62 | 128 | 31,620 | 247 |
| 1938 | 86 | 2,637 | 31 | 13 | 432 | 32 | 148 | 5,711 | 39 | 211 | 13,554 | 64 | 132 | 34,452 | 260 |
| 1937 | Acres | bushels | els | Acres | bushels | els | Acres | bushels | els | Acres | bushels | els | Acres | bushels | els |
| Finnmark | 1 | (4) | 37 | 2 | (4) | 20 | 3,234 | 82 | 37 | 22 | 1 | 53 | 4,146 | 808 | 195 |
| Troms | 54 | 2 | 27 | 235 | 8 | 32 | 6,102 | 216 | 35 | 1,855 | 99 | 53 | 8,137 | 1,807 | 222 |
| Nord-Trøndelag | 1,435 | 51 | 35 | 32 | 1 | 38 | 24,174 | 1,005 | 42 | 15,134 | 933 | 62 | 9,048 | 2,570 | 284 |
| Sør-Trøndelag | 381 | 13 | 33 | 31 | 1 | 30 | 20,103 | 849 | 42 | 7,989 | 492 | 62 | 5,586 | 1,518 | 272 |
| Møre og Romsdal | 155 | 5 | 34 | 33 | 1 | 36 | 5,581 | 238 | 43 | 9,382 | 578 | 62 | 6,291 | 1,410 | 224 |
| Sogn og Fjordane | 72 | 2 | 33 | 22 | 1 | 36 | 2,553 | 114 | 44 | 4,035 | 219 | 54 | 5,180 | 996 | 192 |
| Hordaland | 94 | 3 | 29 | 19 | 1 | 33 | 695 | 29 | 42 | 4,498 | 268 | 60 | 7,955 | 1,279 | 161 |
| Regalund | 3,331 | 133 | 40 | 203 | 8 | 38 | 3,843 | 179 | 47 | 13,303 | 977 | 73 | 9,188 | 2,132 | 232 |
| Vest Agder | 921 | 30 | 33 | 213 | 7 | 32 | 433 | 17 | 39 | 5,833 | 357 | 61 | 3,470 | 710 | 205 |
| Aust Agder | 2,013 | 60 | 30 | 304 | 9 | 31 | 1,042 | 38 | 36 | 3,573 | 212 | 59 | 3,546 | 749 | 211 |
| Telemark | 6,621 | 186 | 28 | 581 | 18 | 32 | 2,915 | 105 | 36 | 5,992 | 343 | 57 | 5,036 | 1,189 | 236 |
| Vestfold | 13,223 | 378 | 29 | 2,674 | 80 | 30 | 2,395 | 84 | 35 | 17,508 | 1,057 | 60 | 8,154 | 1,938 | 236 |
| Buskerud | 7,759 | 231 | 30 | 1,039 | 31 | 30 | 8,013 | 299 | 37 | 12,418 | 712 | 57 | 6,003 | 1,307 | 218 |
| Østfold | 4,605 | 151 | 33 | 1,517 | 52 | 34 | 33,884 | 1,348 | 40 | 9,525 | 598 | 63 | 9,863 | 3,301 | 335 |
| Hedmark | 8,357 | 289 | 35 | 1,874 | 65 | 35 | 15,049 | 630 | 42 | 29,663 | 1,862 | 63 | 14,325 | 4,857 | 339 |
| Akershus | 11,845 | 362 | 31 | 1,734 | 51 | 29 | 18,272 | 643 | 35 | 36,910 | 2,262 | 61 | 11,475 | 2,721 | 237 |
| Oslo | 18,291 | 601 | 33 | 4,122 | 109 | 27 | 1,602 | 57 | 36 | 33,462 | 2,014 | 60 | 10,005 | 2,190 | 219 |
| Total | 79,158 | 2,497 | 32 | 14,635 | 443 | 30 | 148,898 | 5,933 | 40 | 211,102 | 12,984 | 62 | 128,270 | 31,620 | 247 |

¹ Acreages 1919-1922 are not available.³ Production data for 1917-1924 were revised in 1937.² Can use data for 1907⁴ Less than 500

Compiled from Statistisk Årbok and Jordbruksstatistikk.

As a consequence, the two groups of subjects reported together

Compiled from *Blattversk Arkiv* and *Jordbraksstatistik*

there has been a shift in acreage from rye and oats to wheat, partly because a taste has been acquired for white breads and most likely in some degree because a hardier wheat has been developed, more suitable to the geographic location of the country. With the exception of rye and oats, the production of grain crops and potatoes has not declined to the pre-war production levels. Rye production in recent years has been about half of what it was in pre-war years.



Figure 5. - A productive and comfortable farm across the Norwegian border from Petsamo, Finland, in Finnmark, nearly 200 miles north of the Arctic Circle. Note method of curing hay, shown at right.

None of Norway's crops, with the possible exception of hay and potatoes, are sufficient to satisfy domestic consumption, and Norway is therefore on an import basis for agricultural products. In some years a few potatoes are exported, and there have been recent attempts to encourage the exportation of berries. The largest agricultural exports are of cheese, butter, powdered and condensed milk, and eggs. Cowhides, calfskins, sheepskins, and goatskins are also exported.

Seasons differ in Norway, of course, as elsewhere. The greatest climatic drawbacks are occasional late springs and early freezes. Both of these materially affect the maturity and yields of the various crops.

FRUITS AND VEGETABLES

In fruits and vegetables, as well as other agricultural and dairy products, the State aim has been to make the country as self-sustaining as possible. All kinds of vegetables are grown in nearly all parts of the country. Every farm and many city and village dwellers have gardens in which are produced cabbage, carrots, beans, peas, leeks, celery, beets, parsley, rhubarb, cucumbers, tomatoes, and other fresh vegetables. In some years small quantities have actually been exported.

TABLE 5.—Production of truck crops in Norway, by Districts,
1937, annual 1933-1938

| YEAR AND DISTRICTS | CABBAGE | CARROTS (1) | BEANS (2) | PEAS (2) | LEEKs (3) | CELERY (4) | BEETS (5) |
|--------------------|----------------------|------------------------|-----------------------|------------------------|-----------------------|---------------|--------------|
| | Short tons: | Bushels | Bushels | Bushels | Bushels | Crates | Bushels |
| 1933 | 39,542 : | 758,462 : | 36,787 : | 17,387 : | 21,076 : | 9,171 : | 13,393 |
| 1934 | 56,978 : | 708,682 : | 40,579 : | 20,216 : | 28,561 : | 10,798 : | 16,534 |
| 1935 | 40,106 : | 604,933 : | 27,638 : | 13,918 : | 22,454 : | 7,292 : | 12,855 |
| 1936 | 53,209 : | 739,851 : | 31,217 : | 17,328 : | 25,072 : | 8,108 : | 16,055 |
| 1937 | 54,130 : | 776,174 : | 28,990 : | 24,971 : | 26,163 : | 8,848 : | 14,813 |
| 1938 | 58,386 : | 704,277 : | 28,520 : | 19,952 : | 27,431 : | 8,733 : | 15,636 |
| 1937 | : | : | : | : | : | : | : |
| Finnmark | 1 : | 220 : | - : | - : | - : | - : | - |
| Troms | 163 : | 5,847 : | - : | - : | - : | 7 : | 30 |
| Nordland | 286 : | 10,053 : | - : | - : | - : | 3 : | 38 |
| Nord-Trøndelag .. | 619 : | 29,418 : | - : | 103 : | 33 : | 12 : | 136 |
| Sør-Trøndelag .. | 682 : | 14,665 : | - : | 132 : | 44 : | 12 : | 106 |
| Møre og Romsdal : | 803 : | 15,661 : | 7 : | 30 : | 11 : | 12 : | 47 |
| Sogn og Fjordane : | 293 : | 4,630 : | - : | 44 : | 88 : | 10 : | 254 |
| Hordaland | 1,285 : | 16,204 : | 73 : | 228 : | 309 : | 169 : | 411 |
| Rogaland | 4,907 : | 115,450 : | - : | 44 : | 529 : | 191 : | 992 |
| Vest Agder | 764 : | 21,927 : | 272 : | 162 : | 292 : | 81 : | 47 |
| Aust-Agder | 1,293 : | 12,099 : | 3,483 : | 8,098 : | 667 : | 191 : | 127 |
| Telemark | 1,852 : | 25,397 : | 213 : | 176 : | 474 : | 277 : | 170 |
| Vestfold | 4,081 : | 46,601 : | 2,418 : | 485 : | 1,516 : | 478 : | 708 |
| Buskerud | 4,134 : | 28,594 : | 1,227 : | 573 : | 2,618 : | 370 : | 301 |
| Opland | 3,692 : | 39,648 : | 162 : | 1,227 : | 143 : | 177 : | 17 |
| Hedmark | 5,872 : | 84,326 : | 353 : | 213 : | 606 : | 301 : | 292 |
| Akershus | 16,981 : | 95,239 : | 7,826 : | 1,727 : | 15,873 : | 5,308 : | 7,983 |
| Østfold | 6,422 : | 210,195 : | 12,956 : | 11,729 : | 2,960 : | 1,249 : | 3,154 |
| Total | 54,130 : | 776,174 : | 28,990 : | 24,971 : | 26,163 : | 8,848 : | 14,813 |
| | RHUBARB ⁶ | GROWN IN OPEN | | GROWN UNDER GLASS | | OTHER | |
| | Boxes | CUCUMBERS ⁷ | TOMATOES ⁸ | CUCUMBERS ⁷ | TOMATOES ⁸ | VEGETABLES | Short tons |
| 1933 | 41,579 : | 11,974 : | 4,609 : | 26,345 : | 58,264 : | : | 342 |
| 1934 | 49,008 : | 11,909 : | 3,336 : | 34,424 : | 69,894 : | : | 398 |
| 1935 | 43,271 : | 7,670 : | 3,602 : | 30,231 : | 71,055 : | : | 319 |
| 1936 | 44,566 : | 9,393 : | 3,723 : | 31,200 : | 71,878 : | : | 359 |
| 1937 | 45,707 : | 8,116 : | 3,731 : | 32,945 : | 78,675 : | : | 353 |
| 1938 | 45,707 : | 6,839 : | 3,078 : | 32,665 : | 73,788 : | : | 348 |
| 1937 | : | : | : | : | : | : | : |
| Finnmark | - : | - : | - : | - : | - : | - : | - |
| Troms | 226 : | - : | - : | 32 : | 75 : | : | 17 |
| Nordland | 166 : | - : | - : | 28 : | 125 : | : | 4 |
| Nord-Trøndelag .. | 116 : | - : | - : | 303 : | 786 : | : | 3 |
| Sør-Trøndelag .. | 358 : | - : | - : | 946 : | 1,264 : | : | 3 |
| Møre og Romsdal : | 700 : | - : | 62 : | 455 : | 927 : | : | 3 |
| Sogn og Fjordane : | 61 : | 14 : | 50 : | 14 : | 21 : | : | 7 |
| Hordaland | 4,404 : | 9 : | 104 : | 1,139 : | 3,253 : | : | 11 |
| Rogaland | 15,344 : | - : | - : | 450 : | 7,920 : | : | 8 |
| Vest Agder | 2,105 : | 55 : | 108 : | 1,088 : | 1,427 : | : | 5 |
| Aust-Agder | 3,472 : | 303 : | 92 : | 418 : | 1,868 : | : | 12 |
| Telemark | 628 : | 28 : | 75 : | 1,098 : | 1,789 : | : | 5 |
| Vestfold | 1,389 : | 501 : | 304 : | 2,632 : | 10,054 : | : | 24 |
| Buskerud | 1,036 : | 152 : | 466 : | 4,643 : | 6,268 : | : | 23 |
| Opland | 254 : | 9 : | 8 : | 363 : | 1,460 : | : | 4 |
| Hedmark | 402 : | 23 : | 137 : | 2,747 : | 9,476 : | : | 6 |
| Akershus | 12,351 : | 776 : | 1,676 : | 12,111 : | 20,615 : | : | 95 |
| Østfold | 2,695 : | 6,246 : | 649 : | 4,478 : | 11,347 : | : | 123 |
| Total | 45,707 : | 8,116 : | 3,731 : | 32,945 : | 78,675 : | : | 353 |
| | : | : | : | : | : | : | : |

¹ In bushels of 50 pounds.² In bushels of 30 pounds.³ In bushels of 40 pounds.⁴ In terms of crates of 90 pounds.⁵ In bushels of 52 pounds.⁶ In boxes of 40 pounds.⁷ In bushels of 48 pounds.⁸ In bushels of 53 pounds.⁹ Compiled from *Statistisk Årbok* and *Jordbruksstatistikk*.


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TABLE G.—Number of trees and bushes and production of fruit in Norway, by district,  
1937, annual 1929 and 1933-1938

| YEAR AND DISTRICT   | APPLES            |                          | PEARS             |                          | PLUMS             |                          | CHERRIES                 |                          |
|---------------------|-------------------|--------------------------|-------------------|--------------------------|-------------------|--------------------------|--------------------------|--------------------------|
|                     | TREES             | PRODUC-TION <sup>1</sup> | TREES             | PRODUC-TION <sup>2</sup> | TREES             | PRODUC-TION <sup>3</sup> | TREES                    | PRODUC-TION              |
|                     | <i>Thou-sands</i> | <i>1,000 bushels</i>     | <i>Thou-sands</i> | <i>1,000 bushels</i>     | <i>Thou-sands</i> | <i>1,000 bushels</i>     | <i>Thou-sands</i>        | <i>Short tons</i>        |
| 1929 .....          | 1,181             | -                        | 279               | -                        | 534               | -                        | 519                      | -                        |
| 1933 .....          | -                 | 1,479                    | -                 | 155                      | -                 | 289                      | -                        | 5 160                    |
| 1934 .....          | 1,354             | 558                      | 303               | 105                      | 613               | 244                      | 540                      | 4 298                    |
| 1935 .....          | 1,403             | 1,375                    | 304               | 239                      | 631               | 306                      | 556                      | 6 651                    |
| 1936 .....          | 1,442             | 711                      | 309               | 93                       | 647               | 351                      | 561                      | 6 694                    |
| 1937 .....          | 1,494             | 1,105                    | 311               | 162                      | 655               | 250                      | 563                      | 4 356                    |
| 1938 .....          | -                 | 515                      | -                 | 132                      | -                 | 299                      | -                        | 5 083                    |
| 1937 .....          | -                 | -                        | -                 | -                        | -                 | -                        | -                        | -                        |
| Finnmark .....      | -                 | -                        | -                 | -                        | -                 | -                        | -                        | -                        |
| Troms .....         | (5)               | -                        | (5)               | -                        | -                 | -                        | (5)                      | -                        |
| Nordland .....      | (5)               | -                        | (5)               | -                        | (5)               | -                        | (5)                      | -                        |
| Nord-Trøndelag ..   | 10                | 4                        | (5)               | -                        | 1                 | -                        | 15                       | 77                       |
| Sør-Trøndelag ..    | 4                 | 2                        | (5)               | -                        | (5)               | -                        | 7                        | 35                       |
| Møre og Romsdal ..  | 41                | 27                       | 8                 | 4                        | 7                 | 3                        | 12                       | 131                      |
| Sogn og Fjordane .. | 133               | 147                      | 48                | 39                       | 24                | 10                       | 12                       | 138                      |
| Hordaland .....     | 107               | 94                       | 65                | 57                       | 68                | 19                       | 70                       | 278                      |
| Rogaland .....      | 31                | 22                       | 23                | 15                       | 74                | 30                       | 26                       | 232                      |
| Vest-Agder .....    | 50                | 26                       | 11                | 2                        | 41                | 11                       | 35                       | 327                      |
| Aust-Agder .....    | 53                | 29                       | 14                | 6                        | 35                | 12                       | 29                       | 225                      |
| Telemark .....      | 144               | 93                       | 18                | 4                        | 51                | 10                       | 42                       | 233                      |
| Vestfold .....      | 138               | 107                      | 39                | 12                       | 77                | 32                       | 81                       | 750                      |
| Buskerud .....      | 150               | 121                      | 18                | 6                        | 94                | 44                       | 56                       | 555                      |
| Opland .....        | 75                | 58                       | 1                 | 1                        | 5                 | 3                        | 34                       | 269                      |
| Hedmark .....       | 102               | 84                       | 1                 | (5)                      | 5                 | 2                        | 32                       | 168                      |
| Akershus .....      | 294               | 202                      | 33                | 3                        | 104               | 59                       | 69                       | 551                      |
| Østfold .....       | 162               | 89                       | 32                | 13                       | 69                | 15                       | 43                       | 387                      |
| Total .....         | 1,494             | 1,105                    | 311               | 162                      | 655               | 250                      | 563                      | 4 356                    |
|                     | RED CURRANTS      |                          | BLACK CURRANTS    |                          | GOOSEBERRIES      |                          | STRAW-BERRIES            | RASP-BERRIES             |
|                     | BUSHES            | PRODUC-TION <sup>4</sup> | BUSHES            | PRODUC-TION <sup>4</sup> | BUSHES            | PRODUC-TION <sup>4</sup> | PRODUC-TION <sup>6</sup> | PRODUC-TION <sup>6</sup> |
|                     | <i>Thou-sands</i> | <i>Crates</i>            | <i>Thou-sands</i> | <i>Crates</i>            | <i>Thou-sands</i> | <i>Crates</i>            | <i>Crates</i>            | <i>Crates</i>            |
| 1929 .....          | 1,992             | -                        | 1,394             | -                        | 1,283             | -                        | -                        | -                        |
| 1933 .....          | -                 | 404,774                  | -                 | 73,335                   | -                 | 130,003                  | 79,353                   | 96,519                   |
| 1934 .....          | 2 077             | 395,248                  | 1,367             | 88,790                   | 1,319             | 140,915                  | 146,453                  | 91,577                   |
| 1935 .....          | 2,089             | 446,464                  | 1,374             | 117,919                  | 1,326             | 160,463                  | 145,914                  | 124 150                  |
| 1936 .....          | 2,091             | 418,435                  | 1,359             | 113,587                  | 1,324             | 151,383                  | 143 195                  | 133 801                  |
| 1937 .....          | 2,104             | 426,746                  | 1,340             | 110,666                  | 1,353             | 156,664                  | 183 778                  | 153 287                  |
| 1938 .....          | -                 | 406,345                  | -                 | 106,808                  | -                 | 153,385                  | 149,950                  | 131 210                  |
| 1937 .....          | -                 | -                        | -                 | -                        | -                 | -                        | -                        | -                        |
| Finnmark .....      | (5)               | -                        | (5)               | -                        | (5)               | -                        | -                        | -                        |
| Troms .....         | 4                 | 289                      | (5)               | -                        | (5)               | -                        | 98                       | -                        |
| Nordland .....      | 50                | 4,395                    | 11                | 207                      | 9                 | 344                      | 73                       | 141                      |
| Nord-Trøndelag ..   | 70                | 15,409                   | 67                | 3,674                    | 56                | 2,048                    | 870                      | 790                      |
| Sør-Trøndelag ..    | 84                | 14,633                   | 43                | 1,947                    | 47                | 4,276                    | 3,907                    | 214                      |
| Møre og Romsdal ..  | 106               | 19,465                   | 84                | 7 716                    | 104               | 15,106                   | 2,113                    | 1 004                    |
| Sogn og Fjordane .. | 71                | 15,882                   | 66                | 5,452                    | 67                | 7,638                    | 655                      | 2 186                    |
| Hordaland .....     | 164               | 30,217                   | 178               | 10,614                   | 141               | 12,778                   | 4,697                    | 3 552                    |
| Rogaland .....      | 139               | 31,893                   | 194               | 17,834                   | 81                | 10 049                   | 3 074                    | 1 764                    |
| Vest-Agder .....    | 95                | 16,778                   | 45                | 3,509                    | 57                | 7 500                    | 3,938                    | 1 353                    |
| Aust-Agder .....    | 71                | 13,246                   | 83                | 6,894                    | 35                | 3,514                    | 16,008                   | 3,772                    |
| Telemark .....      | 135               | 25,059                   | 45                | 3,688                    | 65                | 7,491                    | 5,040                    | 3 895                    |
| Vestfold .....      | 141               | 29,156                   | 60                | 5,470                    | 74                | 7,634                    | 16 730                   | 11 629                   |
| Buskerud .....      | 138               | 31,609                   | 62                | 5 668                    | 89                | 10,270                   | 41 006                   | 17 147                   |
| Opland .....        | 145               | 36,638                   | 62                | 5,388                    | 71                | 7 321                    | 4 189                    | 6,749                    |
| Hedmark .....       | 157               | 31,751                   | 59                | 4,037                    | 73                | 8 382                    | 11,911                   | 8 408                    |
| Akershus .....      | 344               | 71,043                   | 162               | 14,876                   | 273               | 37,556                   | 59,818                   | 79 807                   |
| Østfold .....       | 190               | 39,283                   | 119               | 13,692                   | 111               | 14,707                   | 9,651                    | 10,876                   |
| Total .....         | 2,104             | 426,746                  | 1,340             | 110,666                  | 1,353             | 156,664                  | 183,778                  | 153 287                  |

<sup>1</sup> In bushels of 48 pounds.<sup>1</sup> In crates (32 quarts) of 40 pounds<sup>2</sup> In bushels of 50 pounds.<sup>5</sup> Less than 500<sup>3</sup> In bushels of 56 pounds.<sup>6</sup> In crates (24 quarts) of 36 poundsCompiled from *Statistisk Årbok* and *Jordbruksstatistikk*.

Apples, pears, plums, cherries, currants, gooseberries, strawberries, and raspberries are the principal fruits. Although a few bushels of apples and pears have been exported in recent years, imports of fruits far exceed exports. All citrus fruits are imported, about 300,000 boxes coming from the United States. The United States also supplies most of the canned fruits that are imported. The fact that so many fruits and vegetables can be grown in Norway demonstrates Norway's moderate climate.

#### LIVESTOCK<sup>1</sup>

The domestic livestock of Norway consists of horses, cattle, hogs, goats, rabbits, reindeer, and chickens. There are also more than 21,000 hives of bees in the country.

There are two breeds of horses in Norway suited to the two distinct agricultural regions, the Eastland horse and the Westland, or Fjord, horse. The Eastland horse, which originated in Guldbrandsdal, has been mixed with the Westland horse, the Danish breed, and English thoroughbreds. Systematic efforts by the State have been made over the past century to improve this horse, resulting in a hardy, energetic, and stocky animal admirably suited to the types of machinery used on the farms in this rugged country and to vehicles used on the narrow crushed-rock roads. It may be considered a light, all-purpose draught horse, weighing between 1,000 and 1,200 pounds.



Figure 6.—An East Side farmer goes to market. He has delivered his farm produce and is returning with his purchases.

The Westland horse is in reality a firm, hard pony. The farms are small in the west-coast area, and the ground difficult to travel because of boulders, abrupt slopes, and forests. Also, small horses are easily transported to island farms. This small, strong, horse, which requires little feed, is especially well suited to the types of farming and the general work in the west-coast area. Over a period of years it has also been improved by the State.

<sup>1</sup> Most of the material concerning types of livestock was obtained from *Norwegian Agriculture*, by O. T. Bjanes [in English], Oslo, 1932. This reference contains a comprehensive summary of several phases of Norwegian agriculture.

The cattle are mostly milk cows. The great geographic differences in this country have resulted in several breeds of cattle, adapted to widely differing areas. In the fjord areas and the mountainous section of the country they are small and hardy, whereas on the more level agricultural land on the eastern side of the country and in the area around Trondheim, where feed is more plentiful and the land comparatively level, they are larger. In all areas the milk cows have a high capacity for milk production in relation to their size. The national cattle-breeding movement has been influential in producing a type of cattle able to withstand the rigors of the land and climate.

TABLE 7. *Livestock in Norway, 1938<sup>1</sup> with comparisons*

| YEAR | HORSES    |              | CATTLE    |           | HOGS      | SHEEP     | GOATS     | CHICKENS  |
|------|-----------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|
|      | TOTAL     | OVER 3 YEARS | TOTAL     | MILK COWS |           |           |           |           |
|      | Thousands | Thousands    | Thousands | Thousands | Thousands | Thousands | Thousands | Thousands |
| 1910 | 168       | -            | 1 134     | -         | 334       | 1 395     | 288       | -         |
| 1917 | 202       | 157          | 1 150     | 765       | 238       | 1 295     | 239       | 1 884     |
| 1918 | 211       | -            | 1 046     | -         | 207       | 1 400     | 235       | 1 676     |
| 1923 | 193       | 170          | 1 131     | 776       | 237       | 1 525     | 242       | 2 638     |
| 1924 | 186       | 165          | 1 114     | 765       | 249       | 1 507     | 259       | 3 018     |
| 1925 | 184       | 163          | 1 151     | 773       | 253       | 1 529     | 276       | 3 173     |
| 1926 | 183       | 162          | 1 200     | 783       | 303       | 1 595     | 290       | 3 053     |
| 1927 | 183       | 162          | 1 209     | 791       | 300       | 1 608     | 290       | 2 994     |
| 1928 | 182       | 161          | 1 221     | 799       | 283       | 1 654     | 293       | 3 092     |
| 1929 | 177       | 157          | 1 224     | 755       | 289       | 1 533     | 324       | 2 920     |
| 1930 | 177       | 157          | 1 251     | 763       | 339       | 1 538     | 333       | 3 098     |
| 1931 | 177       | 156          | 1 310     | 777       | 317       | 1 692     | 344       | 3 324     |
| 1932 | 179       | 15           | 1 342     | 796       | 304       | 1 736     | 343       | 3 503     |
| 1933 | 180       | 156          | 1 340     | 810       | 420       | 1 764     | 343       | 3 544     |
| 1934 | 181       | 155          | 1 294     | 793       | 550       | 1 698     | 338       | 3 513     |
| 1935 | 183       | 155          | 1 328     | 796       | 410       | 1 737     | 334       | 3 437     |
| 1936 | 185       | 156          | 1 348     | 804       | 410       | 1 749     | 331       | 3 472     |
| 1937 | 190       | 156          | 1 343     | 808       | 445       | 1 739     | 322       | 3 481     |
| 1938 | 193       | 158          | 1 399     | 832       | 429       | 1 778     | 308       | 3 526     |

<sup>1</sup> Data for 1910-1922 are not available  
 Compiled from *Statistisk Årbok*, and *Jordbruksstatistikk*.

TABLE 8. *Livestock in Norway, by Districts, 1937*

| DISTRICT         | HORSES    |              | CATTLE    |           | HOGS      | SHEEP     | GOATS     | CHICKENS  | RABBITS <sup>1</sup> | REIN DEER <sup>1</sup> | HIVES OF BEES <sup>1</sup> |
|------------------|-----------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|----------------------|------------------------|----------------------------|
|                  | TOTAL     | OVER 3 YEARS | TOTAL     | MILK COWS |           |           |           |           |                      |                        |                            |
|                  | Thousands | Thousands    | Thousands | Thousands | Thousands | Thousands | Thousands | Thousands | Thousands            | Number                 | Number                     |
| Finnmark         | 1         | 1            | 15        | 9         | -         | 37        | 8         | 6         | 1                    | 78 371                 | 1                          |
| Troms            | 6         | 5            | 51        | 30        | -         | 87        | 16        | 31        | 2                    | 3 471                  | -                          |
| Nordland         | 9         | 8            | 103       | 58        | -         | 185       | 23        | 114       | 7                    | 7 632                  | 6                          |
| Nord Trøndelag   | 11        | 9            | 76        | 42        | -         | 65        | 16        | 167       | 8                    | 8 614                  | 5                          |
| Sør Trøndelag    | 13        | 11           | 87        | 51        | -         | 102       | 20        | 139       | 11                   | 2 985                  | 19                         |
| Møre og Romsdal  | 12        | 9            | 86        | 55        | -         | 156       | 26        | 142       | 20                   | 425                    | 21                         |
| Sogn og Fjordane | 11        | 7            | 78        | 47        | -         | 216       | 95        | 61        | 8                    | 2 770                  | 7                          |
| Hordaland        | 10        | 8            | 85        | 55        | -         | 267       | 30        | 193       | 7                    | 788                    | 149                        |
| Rogaland         | 15        | 12           | 92        | 57        | 48        | 334       | 17        | 787       | 5                    | -                      | 411                        |
| Vest Agder       | 4         | 4            | 42        | 27        | -         | 44        | 2         | 103       | 3                    | -                      | 770                        |
| Aust Agder       | 3         | 3            | 27        | 17        | -         | 24        | 1         | 73        | 5                    | -                      | 1 850                      |
| Telemark         | 8         | 7            | 50        | 31        | 22        | 28        | 7         | 146       | 6                    | -                      | 2 329                      |
| Vestfold         | 10        | 9            | 57        | 32        | 25        | 4         | (2)       | 271       | 8                    | -                      | 2 504                      |
| Buskerud         | 11        | 9            | 69        | 42        | 15        | 31        | 9         | 158       | 21                   | 3 060                  | 1 632                      |
| Oppland          | 17        | 13           | 128       | 78        | 46        | 75        | 39        | 167       | 15                   | 2 672                  | 1 320                      |
| Hedmark          | 18        | 15           | 119       | 70        | 42        | 71        | 13        | 210       | 16                   | 244                    | 1 610                      |
| Akershus         | 16        | 14           | 92        | 57        | 55        | 10        | (2)       | 312       | 23                   | -                      | 4 297                      |
| Oslo             | 15        | 12           | 86        | 50        | 38        | 3         | (2)       | 401       | 21                   | -                      | 4 322                      |
| Total            | 190       | 156          | 1 343     | 808       | 291       | 1 739     | 322       | 3 481     | 187                  | 111 032                | 21 313                     |

<sup>1</sup> Census of June 20 1929 The 1929 census of total rabbits as revised in 1937 is 200 179

<sup>2</sup> Less than 500

<sup>3</sup> Enumerated in 8 Districts only

Compiled from *Statistisk Årbok*.

TABLE 9.—Production of meats, dairy products, and wool in Norway,  
1917 and 1927-1937<sup>1</sup>

| YEAR AND DISTRICT | MEATS           |                 |                 |                 |                 |                 |
|-------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                   | HORSE           | BEEF            | MUTTON          | GOAT            | PORK            | TOTAL           |
|                   | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds |
| 1917              | 4,453           | 70,547          | 19,841          | 2,425           | 52,910          | 150,176         |
| 1927              | 4,032           | 84,745          | 29,780          | 3,294           | 68,131          | 189,991         |
| 1929              | 3,622           | 84,643          | 28,003          | 3,635           | 71,669          | 191,572         |
| 1931              | 3,613           | 90,554          | 30,895          | 3,876           | 78,759          | 207,697         |
| 1933              | 3,638           | 93,321          | 32,203          | 3,860           | 78,726          | 211,748         |
| 1934              | 3,668           | 91,092          | 31,590          | 3,829           | 99,297          | 229,476         |
| 1935              | 3,693           | 93,453          | 32,319          | 3,792           | 83,775          | 217,032         |
| 1936              | 3,765           | 94,672          | 32,355          | 3,759           | 85,364          | 219,915         |
| 1937              | -               | -               | -               | -               | 90,389          | 224,195         |
| 1936              |                 |                 |                 |                 |                 |                 |
| Finnmark          | 13              | 690             | 556             | 88              | 18              | 1,365           |
| Troms             | 55              | 2,875           | 1,790           | 245             | 324             | 5,289           |
| Nordland          | 126             | 5,889           | 3,942           | 262             | 939             | 11,158          |
| Nord-Trøndelag    | 275             | 6,129           | 1,332           | 203             | 3,380           | 11,319          |
| Sør-Trøndelag     | 298             | 6,757           | 1,896           | 221             | 3,203           | 12,375          |
| Møre og Romsdal   | 194             | 5,262           | 2,943           | 304             | 2,581           | 11,284          |
| Sogn og Fjordane  | 423             | 4,724           | 3,730           | 1,116           | 2,723           | 12,716          |
| Hordaland         | 214             | 5,110           | 4,449           | 304             | 3,298           | 13,375          |
| Rogaland          | 372             | 6,177           | 5,820           | 220             | 10,999          | 23,588          |
| Vest-Agder        | 18              | 2,917           | 919             | 18              | 957             | 4,829           |
| Aust-Agder        | 40              | 1,817           | 445             | 15              | 1,938           | 4,255           |
| Telemark          | 112             | 3,754           | 598             | 86              | 4,510           | 9,060           |
| Vestfold          | 212             | 4,932           | 77              | -               | 7,573           | 12,794          |
| Buskerud          | 159             | 4,892           | 642             | 108             | 3,485           | 9,286           |
| Opland            | 403             | 8,355           | 1,543           | 428             | 8,867           | 19,596          |
| Hedmark           | 267             | 8,561           | 1,400           | 141             | 9,325           | 19,694          |
| Akershus          | 302             | 8,117           | 205             | -               | 13,058          | 21,682          |
| Østfold           | 282             | 7,714           | 68              | -               | 8,186           | 16,250          |
| Total             | 3,765           | 94,672          | 32,355          | 3,759           | 85,364          | 219,915         |
| MILK              |                 |                 |                 |                 |                 |                 |
|                   | COW             | GOAT            | BUTTER          | CHEESE          | EGGS            | WOOL            |
|                   | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>pounds | 1,000<br>dozens | 1,000<br>pounds |
| 1917              | 2,506,718       | 52,196          | 6,768           | 15,430          | 13,580          | 4,367           |
| 1927              | 2,622,367       | 63,184          | 7,156           | 33,380          | 24,875          | 5,421           |
| 1929              | 2,695,295       | 68,706          | 8,307           | 33,750          | 24,005          | 5,172           |
| 1931              | 2,773,554       | 74,743          | 13,272          | 36,614          | 27,612          | 5,708           |
| 1933              | 2,892,435       | 74,855          | 19,352          | 36,535          | 31,968          | 5,950           |
| 1934              | 2,869,265       | 73,232          | 20,366          | 38,380          | 31,689          | 5,734           |
| 1935              | 2,980,619       | 72,421          | 20,470          | 41,332          | 31,011          | 5,864           |
| 1936              | 3,007,608       | 71,841          | 25,086          | 46,921          | 31,321          | 5,908           |
| 1937              | 3,025,972       | 69,707          | 26,715          | 47,275          | 31,407          | 5,866           |
| 1936              |                 |                 |                 |                 |                 |                 |
| Finnmark          | 23,788          | 3,073           | 291             | 2,187           | 56              | 110             |
| Troms             | 84,654          | 6,784           |                 |                 | 297             | 280             |
| Nordland          | 171,048         | 8,463           | 443             | 1,197           | 997             | 736             |
| Nord-Trøndelag    | 168,191         | 3,435           | 631             | 4,416           | 1,436           | 223             |
| Sør-Trøndelag     | 182,162         | 3,960           | 1,054           | 1,566           | 1,265           | 346             |
| Møre og Romsdal   | 146,476         | 2,928           | 886             | 2,524           | 1,292           | 547             |
| Sogn og Fjordane  | 128,737         | 14,268          | 670             | 549             | 554             | 706             |
| Hordaland         | 169,906         | 5,181           | 756             | 1,305           | 1,806           | 849             |
| Rogaland          | 228,732         | 3,025           | 3,448           | 6,768           | 6,925           | 1,069           |
| Vest-Agder        | 98,669          | 251             | 635             | 820             | 1,036           | 152             |
| Aust-Agder        | 62,963          | 302             | 441             | 489             | 658             | 90              |
| Telemark          | 127,909         | 1,878           | 1,027           | 979             | 1,311           | 112             |
| Vestfold          | 147,547         | 13              | 1,233           | 1,385           | 2,502           | 15              |
| Buskerud          | 177,605         | 2,394           | 1,080           | 1,678           | 1,434           | 99              |
| Opland            | 289,881         | 11,107          | 2,189           | 11,601          | 1,534           | 256             |
| Hedmark           | 292,888         | 4,740           | 3,675           | 4,852           | 1,892           | 265             |
| Akershus          | 270,573         | 24              | 3,761           | 2,445           | 2,779           | 38              |
| Østfold           | 235,879         | 15              | 2,866           | 2,460           | 3,547           | 15              |
| Total             | 3,007,608       | 71,841          | 25,086          | 46,921          | 31,321          | 5,908           |

<sup>1</sup> Data 1927-1937 are for years beginning June 20, except butter and cheese, which are for calendar year indicated. Data other than for butter and cheese are not available for 1928, 1930, and 1932.

<sup>2</sup> Data for 1915.



The sheep of the country are mostly of English and Scotch breeds, with the Cheviot type especially prevalent. From the original sheep of the country and the imported kinds, a type has been developed that is larger, and yet well suited to conditions in the country. In sections of the country where dairying can be carried on successfully, sheep have been replaced by dairy cattle to a large extent.

The goat has always been a leading domesticated animal in rough mountainous areas where other animals find foraging exceedingly difficult. In Norway goats are kept chiefly for milk, from which an export cheese is made.

Swine production in recent years has increased constantly in Norway, until at present there are twice as many as there were 20 years ago. Formerly the Yorkshire predominated, but recently an attempt was made to breed a type more fitted to the country - the so-called Landswine.

Probably three-fourths of the poultry in the country are White Leghorns. About 10 years ago, the State started breeding stations, of which there are now 20 situated in different parts of the country. The purpose of these stations has been to increase the egg production per hen, and during the existence of these stations the average egg yield has been increased from 150 eggs to 200 eggs per year.

The reindeer in the northern Districts are the mainstay of the Laplander population. Many families are nomadic, moving from place to place to find grazing areas for the reindeer, which furnish them means of transportation, their meat supply, a large part of their clothing, and covering for their tents. Some of the inhabitants of the northern Districts, whose herds are not large enough to justify a nomadic life, live in one place in rather comfortable farm homes and raise the limited crops grown in these Districts. Reindeer are kept in all but the southernmost regions, but by far the largest numbers are in the Districts of the far north.

Rabbits are also farm animals in Norway, there being over 200,000 in 1937 scattered throughout the entire length of the country, though most numerous in the southern Districts. Rabbits are kept for food and for their skins. Honey, produced by the 21,000 hives of bees, is a substantial item of food. As a point of interest it might be noted that there is one hive in Finnmark, far above the Arctic Circle.

## AGRICULTURE AS A WAY OF LIFE

### THE FARM - A TRADITION

A Norwegian farm is a family tradition. The oldest son becomes owner at the death of his father. In reality he has the first right to purchase the farm from the other heirs for a nominal sum. Often the oldest son takes over the management of the farm long before he inherits it. Practically all Norwegian farms have at least two dwellings on them, one for the retired farmer and one for the son who will inherit the place. See figure 7. Norwegian farmers who retire seldom move to town; rather they continue to live on the farm, where all their interests are.

Taxes on the assessed valuation of farm properties have increased only slightly in recent years. The average for the State as assessed in 1936 was equivalent to about 3.8 mills on the dollar. Income taxes, however, were about 15 cents on the dollar for incomes above legal exemptions. All incomes of less than 2,000 kroner (approximately \$500) are exempt.

Through the law of primogeniture, a farm tends to stay in one family for generations. Sons and their male descendants are the first to inherit; the daughters of the sons and the descendants of these daughters are the second to inherit; and the daughters of the original holders and their descendants are the third to inherit. Succession is always traced from the latest possessor of the property.

Between 90 and 95 percent of the farms in Norway are individually owned. Occasionally, a portion of a farm is sold. When this is done, the new divisions must be capable of supporting a family unit. When several persons are in the market for a single piece of land, the one who has done most to improve it or is the closest blood relative of either the owner or the one who has rented it has prior right of purchase. Norwegian farming is a way of life, not a commercial undertaking, and farms are seldom sold unless there is no heir or the owner is a failure as a farmer. Few Norwegian farmers are failures; so the farms sold are few in number.

#### OLD FARM CULTURE

The relative inaccessibility of Norway, one of the oldest sovereign States in Europe, long prevented ready contact with the outside world. Communication between farms in neighboring valleys was infrequent because of the difficult terrain. The farm home became the significant social unit in Norway, and within it developed the distinctive Norwegian culture.

Many farmhouses of hundreds of years ago still stand, and some have been taken over by the State to preserve this old Norwegian culture. These early farm homes were constructed of the materials available locally. The foundations are of Norway's abundant rock, uncut. The houses are of hand-hewn lumber from the forests, and the years have given them a brownish color, verging on golden, that only the elements could paint. They are usually furnished with hand-made furniture in the style of the day in which they were constructed. The spacious rooms have square open fireplaces, long wooden tables with long benches on either side, hand-carved cupboards, and seemingly short wooden beds. These old homes bespeak comfort and cleanliness, but elegance is entirely lacking.

In many instances the old farm homes have become a fad with city people in Norway and have been purchased and moved into cities and towns, where they have been modernized and where they diffuse an air of old Norway in a new setting. Farm culture representative of old Norway is preserved for posterity and the world in museums - notably in the museum at Oslo and Maihaugen Museum at Lillehammer. Thus the old farm culture of Norway is preserved both in museums and in the lives of the people.



Figure 7.- Old-type farmhouses and barn on the East Side of Norway. The second house from the right has been taken over by the State to preserve old farm culture, as to both architecture and household furnishings.

#### FARM LIFE

Norwegian farm homes are comfortable. Some of the larger ones have the appearance of summer hotels. The smaller ones, often of two or three rooms only, are nevertheless sturdily built to withstand the cold. Cleanliness prevails, and the furnishings are much the same as in the farmhouses of the United States, except where furnishings of earlier centuries have been preserved.

Practically every farm, no matter what its size, is kept in a neat condition. No debris lies around the buildings; nothing seems to be done in a haphazard fashion; the yards seem fine-tooth combed. Most of the buildings are painted - a splash of color in the summer green or in the winter snow.

During the summer 4 months of continual daylight, which the northern two-thirds of Norway experiences, farmers are seen out any hour of the night. It is not uncommon to see a coast farmer in his small boat going to visit a neighbor to have coffee at half past 3 in the morning. Even though farms are adjacent, the land between may be so rocky and difficult to travel that by boat is the easier way. The people seem to sleep when sleep overtakes them. During the rest of the time they absorb the sunshine while they can.

They do not, however, idle throughout the long winter night of approximately 4 months. They necessarily stay indoors more, but they are seldom unoccupied. Practically every home has a loom, and the people weave not only for home use but for sale. Many farms have contracts with stores to furnish a specified amount of woven material. In some cases, the store furnishes the materials with which to work and pays the farm people for the work only. In other cases, the farm people



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furnish both materials and labor. They weave tablecloths, luncheon sets, towels, pillow tops, scarfs, and many other articles. They often prepare their own flax, wool, or cotton, and also their own delicate vegetable dyes. Besides the weaving, much hand sewing and embroidery is done. This type of work is carried on in conjunction with farming to spread employment and furnish cash to farm people in both the East Side farming area and the West Side.

Although only 6 percent of the entire population devotes all its time to the fishing industry, this furnishes year-round employment and a cash income to many coast farmers. Even where it is not part-time employment, fishing furnishes the meat supply for the family table. The housewife need only request meat for the noonday meal, and husband or son rows away in his boat. He soon returns with a goodly catch.

In more recent years, especially since about 1925, silver-fox farming has furnished additional cash incomes to Norwegian farmers. The production of fur animals is carried on in connection with many small farms throughout the country. These fur animals consume tons of meat and fish each year, and in this way have helped to maintain meat prices.

In the southern and eastern part of the country, forestry in either privately owned or State-owned forests furnishes year-round employment and a cash income in connection with farming. About 80 percent of the farms have forest land attached to them, which furnishes wood for fuel and timber for sale. Only about 20 percent of the country's forests is State owned.

Odd jobs about the farm are numerous. Men keep their fishing apparatus in repair, keep their farm tools in order, and care for the livestock during the long winter when the entire country is snow-covered. They also make twig brooms, used on many of the city streets. They have the necessary materials from the forests and find it profitable to make these brooms in their spare time, selling them for 8 or 10 cents. There seems to be no rush of work on Norwegian farms; and, generally speaking, there is no idleness, but rather a busy life of comparative ease and seeming contentment. In practically every farm home the coffee pot is on for visitors and the coffee cream is heavy. Too, some member of the family always makes delicious pastries, and the table is often spread with a beautiful piece of embroidery done by the mother or daughter.

Living standards are high, probably among the highest in the world, and prices of living essentials compare very favorably with those in the United States. Though the farm homes are isolated, most farms now have telephones and radios. Radios keep them in touch with the world and educational programs predominate. Electrical appliances of all descriptions are found in farm homes, since about two-thirds of the farms have access to, and are financially able to use, electric current. ✓

Norwegian farm life seems to be the best possible adjustment to the natural environment and the Norwegian farm is a place of comfort and health, affording for farm families time for recreation and enjoyment of life. ✓

FARM LABOR

Farming in Norway in the old days was a stern and severe task. First there was the selection of the most promising tracts. Even upon these, much hard labor had to be performed - labor by might of hand and physical endurance. Forests had to be cleared by manpower; boulders had to be removed by manpower. Each year, over long periods of time, rocks, which seemed to grow out of the thin soil, had to be removed from many areas. These early conditions necessitated the development of some type of farm labor. In these earlier times farming was the main pursuit by which a living could be obtained, and agricultural land was scarce. Probably the most enterprising or the first upon the scene acquired the virgin farm land.

Thus back in the ages developed the *husmannsplass*. In order to obtain help to make the land productive, the owner offered a small house and a little plot of ground to the *husmann* (cotter) and his family, the *husmannfolk*, in return for a specified amount of work on the owner's farm each year. The *husmann's* contract with the owner was usually a life contract, though this differed somewhat in different sections of the country. Year in and year out the *husmann* and his family worked at arduous, backbreaking tasks, for a wage never more than a few cents a day. On the other hand, they were always sure of a place to stay. As late as 1885, the average daily wage of the *husmann* was 14 cents. From that year on there was a gradual increase until in 1915 the average daily wage was about 46 cents.

Figure 8.- A *husmannsplass*, located on a fresh-water lake in eastern Norway. Note the fishing tackle at the left and the flowerers in the yard.



The number engaged in this type of farm labor declined from 67,396 in 1855 to 19,811 in 1910 and to 6,079 by 1929; today it is practically nonexistent. Indeed, it is rather difficult to find examples of this type of Norwegian farm people. Much legislation has indirectly opposed this farm labor under contract, and most farmowners have voluntarily released their *husmannfolk* from work under the old terms. In recent years there has been much gradual social reform in Norway.² Old social customs, however, have not been uprooted summarily. A few old members

² Nordskog, John Eric, *Social Reform in Norway*, Los Angeles, 1935.

of this distinctly Norwegian class of agricultural people still live on the *husmannsplass*, not for the labor they perform but because it is home to them for the rest of their lives.

Farm labor, other than family labor, is now hired by the month. Wages approximate a dollar a day with board during the harvesting season, and about 75 cents during the winter season. Women doing farm work receive about one-half the wages men receive. A 10-hour day prevails for summer work and an 8-hour day during the winter. The work days are broken by long rest periods and four or five meals are served.



Figure 9.—Ingeborg, a former *husmann's* daughter, born to hard work in the fields. At the age of 87 she still enjoyed a good day's work and retained a keen sense of humor and interest in world affairs.

Horses do all the heavy work on the small farms, and it might be added that a team indicates rather large-scale farming. The land on only a few farms in Norway permits the use of a tractor for field work, and most of the farm machinery is of the smaller type.

On fully two-thirds of Norway's farms electricity furnishes not only light and power for household appliances but also power for turning wood-sawing engines, cream separators, and other machinery.

Norway has the largest per-capita hydroelectric power, both developed and potential, of any country in the world. Per-capita consumption for domestic uses is about 3,000 kilowatt hours as compared with about 100 kilowatt hours in Europe as a whole and with approximately 150 kilowatt hours in the United States. Different rates apply to current used for different purposes. A common device used to measure the consumption of current is the current-limiter, which automatically limits the use to a fixed maximum. For those not in an economic position to purchase appliances for the efficient use of a maximum, kilowatt tariffs have been introduced so that subscribers may use the energy they require and pay for the amount actually consumed. The current-limiter is the less expensive if appliances are sufficient for an economic use, with rates from about three quarters of a cent to 2 cents per kilowatt hour.

Women do the work in the fields, but not with the feeling that it is toil. Few old women are seen working outdoors any more, and the young girls seem to make


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sport of their work. They always have time to wave to a passer-by and seldom seem to work in the field all day. for if one passes the same farm in the afternoon, they will be seen sitting outside at home busied with handicraft work. The exercise in the open fields seems most health-giving.

TABLE 10. Daily Wages of agricultural laborers in Norway,  
1915-16 to 1937-38

| SEASON<br>AND<br>TERMS | MEN              |                |                  |               |                        | WOMEN            |                |                  |               |                        |
|------------------------|------------------|----------------|------------------|---------------|------------------------|------------------|----------------|------------------|---------------|------------------------|
|                        | SUMMER HALF YEAR |                |                  |               | WINTER<br>HALF<br>YEAR | SUMMER HALF YEAR |                |                  |               | WINTER<br>HALF<br>YEAR |
|                        | SPRING<br>WORK   | HAY<br>HARVEST | GRAIN<br>HARVEST | OTHER<br>WORK |                        | SPRING<br>WORK   | HAY<br>HARVEST | GRAIN<br>HARVEST | OTHER<br>WORK |                        |
| With board:            | Kroner           | Kroner         | Kroner           | Kroner        | Kroner                 | Kroner           | Kroner         | Kroner           | Kroner        | Kroner                 |
| 1915-16                | 2 51             | 2 95           | 2 49             | 2 37          | 1 81                   | 1 30             | 1 53           | 1 42             | 1 18          | 1 02                   |
| 1920-21                | 8 71             | 9 88           | 8 83             | 8 11          | 6 84                   | 4 60             | 5 13           | 4 93             | 4 14          | 3 50                   |
| 1925-26                | 5 03             | 5 75           | 4 97             | 4 64          | 3 81                   | 3 05             | 3 45           | 3 25             | 2 81          | 2 41                   |
| 1930-31                | 3 22             | 3 70           | 3 20             | 2 94          | 2 47                   | 2 04             | 2 28           | 2 17             | 1 84          | 1 63                   |
| 1931-32                | 2 97             | 3 38           | 2 94             | 2 70          | 2 30                   | 1 92             | 2 13           | 2 03             | 1 74          | 1 53                   |
| 1932-33                | 2 79             | 3 18           | 2 77             | 2 55          | 2 13                   | 1 80             | 2 00           | 1 89             | 1 65          | 1 46                   |
| 1933-34                | 2 68             | 3 05           | 2 68             | 2 43          | 2 04                   | 1 74             | 1 93           | 1 81             | 1 60          | 1 40                   |
| 1934-35                | 2 70             | 3 07           | 2 69             | 2 48          | 2 10                   | 1 74             | 1 95           | 1 85             | 1 61          | 1 42                   |
| 1935-36                | 2 81             | 3 17           | 2 83             | 2 61          | 2 23                   | 1 81             | 2 01           | 1 93             | 1 68          | 1 48                   |
| 1936-37                | 3 00             | 3 38           | 3 03             | 2 78          | 2 41                   | 1 94             | 2 12           | 2 03             | 1 79          | 1 60                   |
|                        | 3 54             | 4 04           | 3 65             | 3 34          | 2 92                   | 2 21             | 2 46           | 2 38             | 2 11          | 1 89                   |
| 1937-38 <sup>1</sup>   | Dollars          | Dollars        | Dollars          | Dollars       | Dollars                | Dollars          | Dollars        | Dollars          | Dollars       | Dollars                |
|                        | 0 88             | 1 00           | 0 91             | 0 83          | 0 72                   | 0 55             | 0 61           | 0 59             | 0 52          | 0 47                   |
| Without board:         | Kroner           | Kroner         | Kroner           | Kroner        | Kroner                 | Kroner           | Kroner         | Kroner           | Kroner        | Kroner                 |
| 1915-16                | 3 64             | 4 00           | 3 64             | 3 32          | 3 08                   | 2 12             | 2 35           | 2 22             | 2 00          | 1 84                   |
| 1920-21                | 12 50            | 13 64          | 12 71            | 11 95         | 10 25                  | 7 09             | 7 67           | 7 44             | 6 76          | 5 81                   |
| 1925-26                | 7 60             | 8 18           | 7 56             | 7 15          | 6 18                   | 4 85             | 5 19           | 4 98             | 4 58          | 4 06                   |
| 1930-31                | 4 72             | 5 14           | 4 71             | 4 43          | 3 90                   | 3 15             | 3 37           | 3 29             | 2 96          | 2 72                   |
| 1931-32                | 4 34             | 4 72           | 4 35             | 4 07          | 3 57                   | 2 93             | 3 15           | 3 02             | 2 77          | 2 50                   |
| 1932-33                | 4 03             | 4 40           | 4 04             | 3 78          | 3 32                   | 2 75             | 2 94           | 2 85             | 2 60          | 2 36                   |
| 1933-34                | 3 93             | 4 26           | 3 90             | 3 66          | 3 21                   | 2 66             | 2 85           | 2 74             | 2 52          | 2 27                   |
| 1934-35                | 3 92             | 4 27           | 3 95             | 3 70          | 3 28                   | 2 68             | 2 89           | 2 79             | 2 56          | 2 32                   |
| 1935-36                | 4 06             | 4 38           | 4 08             | 3 84          | 3 40                   | 2 75             | 2 96           | 2 87             | 2 63          | 2 38                   |
| 1936-37                | 4 29             | 4 63           | 4 31             | 4 07          | 3 64                   | 2 92             | 3 13           | 3 05             | 2 81          | 2 55                   |
|                        | 4 97             | 5 41           | 5 08             | 4 78          | 4 33                   | 3 27             | 3 50           | 3 45             | 3 18          | 2 93                   |
| 1937-38 <sup>1</sup>   | Dollars          | Dollars        | Dollars          | Dollars       | Dollars                | Dollars          | Dollars        | Dollars          | Dollars       | Dollars                |
|                        | 1 24             | 1 34           | 1 26             | 1 19          | 1 08                   | 0 81             | 0 87           | 0 86             | 0 79          | 0 73                   |

<sup>1</sup> Conversions at 1937 average rate of exchange (24 84 cents to the krone)

Compiled from *Statistisk Årbok*.

TABLE 11. Agricultural machinery in Norway, by Districts<sup>1</sup>

| DISTRICT         | REAP<br>ERS | MOW<br>ERS | BIND<br>ERS | PLANT<br>ERS | POTATO<br>DIGGERS | GASOLINE<br>TRACTORS | ENGINES<br>OTHERS | ELECTRIC<br>MOTORS | WAGONS | CARTS   |
|------------------|-------------|------------|-------------|--------------|-------------------|----------------------|-------------------|--------------------|--------|---------|
|                  | Number      | Number     | Number      | Number       | Number            | Number               | Number            | Number             | Number | Number  |
| Finnmark         | 19          | 128        | -           | -            | 4                 | -                    | 1                 | 3                  | 47     | 762     |
| Troms            | 53          | 1 688      | 2           | 9            | 12                | 2                    | 17                | 31                 | 250    | 6 743   |
| Nordland         | 249         | 3 426      | 10          | 107          | 173               | 11                   | 96                | 106                | 924    | 11 109  |
| Nord Trøndelag   | 3 303       | 3 600      | 519         | 1 653        | 1 588             | 66                   | 537               | 1 713              | 2 492  | 14 508  |
| Sør Trøndelag    | 2 231       | 5 532      | 244         | 1 112        | 843               | 61                   | 528               | 823                | 1 380  | 17 590  |
| Møre og Romsdal  | 462         | 6 386      | 20          | 498          | 310               | 21                   | 299               | 546                | 293    | 21 018  |
| Sogn og Fjordane | 110         | 3 978      | 3           | 241          | 183               | -                    | 58                | 252                | 742    | 9 842   |
| Hordaland        | 153         | 4 854      | 7           | 286          | 98                | 6                    | 61                | 424                | 586    | 12 858  |
| Rogaland         | 1 047       | 5 303      | 274         | 358          | 769               | 39                   | 220               | 1 329              | 649    | 19 749  |
| Vest Agder       | 444         | 2 682      | 8           | 134          | 39                | 6                    | 113               | 672                | 2 086  | 5 983   |
| Aust Agder       | 366         | 2 038      | 16          | 329          | 152               | 6                    | 185               | 363                | 3 055  | 2 550   |
| Telemark         | 1 100       | 3 031      | 158         | 1 129        | 774               | 16                   | 360               | 733                | 3 699  | 6 193   |
| Vestfold         | 3 293       | 2 019      | 536         | 2 372        | 1 280             | 60                   | 176               | 1 510              | 6 908  | 8 047   |
| Ruskerud         | 2 473       | 2 768      | 650         | 2 267        | 1 025             | 89                   | 403               | 1 296              | 6 104  | 7 401   |
| Oppland          | 4 118       | 3 034      | 1 033       | 1 262        | 1 657             | 40                   | 330               | 1 586              | 3 760  | 12 336  |
| Hedmark          | 3 300       | 1 687      | 889         | 3 712        | 1 715             | 138                  | 319               | 1 913              | 6 653  | 14 265  |
| Akershus         | 3 737       | 2 817      | 1 429       | 3 935        | 1 796             | 201                  | 369               | 1 698              | 9 110  | 10 519  |
| Østfold          | 4 396       | 2 076      | 991         | 3 608        | 1 592             | 124                  | 308               | 1 647              | 8 559  | 11 995  |
| Total            | 30 854      | 60 047     | 6 789       | 27 012       | 14 015            | 889                  | 4 380             | 17 275             | 57 297 | 193 468 |

<sup>1</sup> Census of June 20 1929

Compiled from *Statistisk Årbok*.

## GOVERNMENT INFLUENCE IN AGRICULTURE

## NEW FARM LAND

Because of the scarcity of agricultural land and the law of inheritance, emigration of the agricultural population became one of Norway's problems. Each year for the past century, large numbers, among them some of the best citizens, left Norway for greater opportunities in lands agriculturally more affluent - principally the United States.

The 3 percent of Norway's surface that is cultivable can be increased to about 4 or 4½ percent, but the expense involved in preparing new land in most cases is almost prohibitive, ranging from about \$140 to as much as \$1,000 per acre because of the necessity of removing stumps and boulders, and in some cases of draining the land.

In order to stem the tide of emigration and during and after the World War to help the country become more nearly self-sustaining agriculturally, the Government has given direct subsidies and loans at low rates of interest, or without interest, to new homesteaders. About 25,000 acres have been added to the cultivable land every year during the past decade. During the period 1918-1937, about 350,000 acres of new land were brought under cultivation and about 13,000 new farms were established.

## AGRICULTURAL SCHOOLS AND EXPERIMENT STATIONS

The Norwegian College of Agriculture, established at Aas about 21 miles south of Oslo in 1859, is a school of higher education that trains principally agricultural teachers, and officials for the Department of Agriculture since the establishment of that Department in 1900.

Besides the Aas College of Agriculture, there are more than 50 schools in all parts of the country specializing in agriculture and doing experimental and demonstration work. Since the country is far reaching from north to south and the contour of the land unusually rough, agricultural conditions in the different sections are so diverse that each school deals with conditions in its particular location. It is obviously not to the best interest of agriculture in such a country to centralize agricultural activities for all locations in one central office. Decentralization has been the keynote of administration.

Practically all sons who will inherit farms, and also many sons who will not, go to the agricultural school most suited to the area in which their home farms are located to learn the best methods to pursue in making the acreage produce most abundantly and to determine the best use to which each part of the land can be put. The farm population as a whole is well educated and vitally interested in social and political changes and in world affairs. Norway has had compulsory education for nearly 100 years.

Under the Department of Agriculture are a number of experiment stations dealing with soil culture, plant production, horticulture, dairying, and the raising of horses, hogs, sheep, and goats. Many other phases of agriculture are also being studied, each in the particular environment in which problems relating to them have arisen. The experiment stations, as well as the agricultural schools, are widely scattered over the whole country to deal with the widely diversified conditions.

Another type of experiment farm under the national organization of the Norwegian Silver Fox Breeders Association operates for the improvement and development of colors in furs. In 1937, the value of fur exports totaled 10 million dollars.

Legislation in Norway relative to natural resources has always been with the idea foremost of preserving these natural resources for the citizens of the country and of improving and developing them in a way most advantageous to the people.

#### MARKETING METHODS<sup>3</sup>

As late as 1929 there was no effective standardization of quality for agricultural products, and the production of the various commodities that had been expanded during the World War was irregular from year to year. Although the worldwide depression after 1929 was less severe in Norway than in many other countries because of the great variety of both industrial and agricultural production, the decline in prices of agricultural products was felt keenly. The Government at this time began a widespread study of the needs of agriculture, and by 1938 the national budget for agriculture, excluding agricultural schools, was equivalent to approximately 8 million dollars.

Lower prices for agricultural products after 1929 were in part due to expanded production during and immediately following the World War. It was not until after the war that agricultural products were exported to any extent.

The Marketing Act of 1930, supplemented by the act of July 10, 1936, made possible the producers' organizations and marketing organizations affecting the sales of agricultural products in all parts of the country. The Marketing Act provided for a Marketing Board composed of eight members representing eight large agricultural organizations, whose main purpose was to promote cooperation in the marketing of bacon, mutton, milk, cheese, butter, and eggs - the more important export products.

The Government, with the approval of the Marketing Board, has placed a sales tax on products covered by the act as follows: 0.25 cent per gallon of milk; 37 cents per hog slaughtered; and 12 cents per sheep slaughtered (conversions at current rate of exchange). All animals must pass the public meat inspection. The taxes are used by the Marketing Board to improve the distribution of the products covered by the act and to standardize the quality.

<sup>3</sup> Fjelstad, Anders, "Modern Organization and Marketing Methods in Norwegian Agriculture." *Norway: Norwegian Trade Review*, Vol. 10, No. 4, April 1939. [Special number.]

TABLE 12.—Prices of specified farm products in Norway, by months,  
1937-1938<sup>1</sup>

| MONTH          | FAY PER<br>SHORT TON |         | POTATOES<br>PER BUSHEL |        | BEEF<br>PER POUND |       | PORK<br>PER POUND |       | GREEN HIDES<br>PER POUND |       | EGGS<br>PER DOZEN |       |
|----------------|----------------------|---------|------------------------|--------|-------------------|-------|-------------------|-------|--------------------------|-------|-------------------|-------|
|                | 1937                 | 1938    | 1937                   | 1938   | 1937              | 1938  | 1937              | 1938  | 1937                     | 1938  | 1937              | 1938  |
|                | Dollars              | Dollars | Cents                  | Cents  | Cents             | Cents | Cents             | Cents | Cents                    | Cents | Cents             | Cents |
| Jan . . . . :  | 19.71:               | 16.39:  | 49.1:                  | 68.7:  | 15.3:             | 19.7: | 15.0:             | 15.5: | 9.7:                     | 8.4:  | 22.0:             | 27.5  |
| Feb . . . . :  | 21.35:               | 16.26:  | 52.9:                  | 70.3:  | 15.2:             | 19.4: | 14.5:             | 14.9: | 9.8:                     | 8.1:  | 21.2:             | 26.4  |
| Mar . . . . :  | 23.22:               | 15.72:  | 54.5:                  | 71.8:  | 15.3:             | 19.4: | 13.7:             | 14.4: | 10.0:                    | 7.8:  | 25.4:             | 23.9  |
| Apr . . . . :  | 24.02:               | 15.33:  | 54.9:                  | 75.3:  | 15.8:             | 19.5: | 13.3:             | 14.5: | 11.1:                    | 7.3:  | 22.2:             | 22.1  |
| May . . . . :  | 22.49:               | 16.57:  | 53.6:                  | 83.7:  | 16.7:             | 19.4: | 13.5:             | 14.8: | 11.4:                    | 7.5:  | 19.1:             | 21.2  |
| June . . . . : | 21.28:               | 17.13:  | 55.3:                  | 103.0: | 18.3:             | 19.1: | 14.1:             | 15.8: | 10.6:                    | 7.2:  | 18.9:             | 22.7  |
| July . . . . : | 20.17:               | 14.96:  | 79.1:                  | 119.5: | 21.5:             | 19.2: | 15.4:             | 16.4: | 10.5:                    | 7.4:  | 22.4:             | 26.1  |
| Aug . . . . :  | 18.60:               | 14.19:  | 65.8:                  | 67.9:  | 21.8:             | 19.1: | 15.8:             | 17.2: | 11.2:                    | 8.2:  | 24.4:             | 27.2  |
| Sept . . . . : | 17.25:               | 13.77:  | 61.5:                  | 52.4:  | 21.6:             | 17.8: | 15.9:             | 16.6: | 11.4:                    | 8.1:  | 28.6:             | 30.7  |
| Oct . . . . :  | 15.70:               | 13.43:  | 61.6:                  | 50.1:  | 21.3:             | 17.6: | 15.8:             | 16.4: | 10.6:                    | 8.0:  | 33.4:             | 33.6  |
| Nov . . . . :  | 15.60:               | 13.67:  | 63.5:                  | 51.8:  | 21.4:             | 17.3: | 15.9:             | 16.0: | 9.3:                     | 8.0:  | 35.0:             | 32.8  |
| Dec . . . . :  | 15.96:               | 14.01:  | 65.8:                  | 51.1:  | 20.5:             | 16.9: | 15.8:             | 16.2: | 8.0:                     | 7.7:  | 33.5:             | 30.3  |
| Average:       | 19.61:               | 15.12:  | 59.8:                  | 72.1:  | 18.7:             | 18.7: | 14.9:             | 15.7: | 10.3:                    | 7.8:  | 25.5:             | 27.0  |

| MONTH          | BUTTER<br>PER<br>POUND |       | CHEESE PER POUND    |       |                       |       |                       |       |        |       |
|----------------|------------------------|-------|---------------------|-------|-----------------------|-------|-----------------------|-------|--------|-------|
|                | 1937                   | 1938  | HELFEIT<br>GAUDAOST |       | HALVFEIT<br>NØKKELOST |       | BLANDET<br>GEITMYSOST |       | MYSOST |       |
|                |                        |       | 1937                | 1938  | 1937                  | 1938  | 1937                  | 1938  | 1937   | 1938  |
|                | Cents                  | Cents | Cents               | Cents | Cents                 | Cents | Cents                 | Cents | Cents  | Cents |
| Jan . . . . :  | 28.6:                  | 33.7: | 14.9:               | 18.8: | 11.7:                 | 15.7: | 13.5:                 | 17.0: | 4.3:   | 5.9   |
| Feb . . . . :  | 29.2:                  | 33.7: | 15.3:               | 18.6: | 12.4:                 | 15.8: | 14.4:                 | 17.2: | 4.3:   | 5.9   |
| Mar . . . . :  | 29.7:                  | 33.3: | 15.9:               | 18.7: | 12.7:                 | 15.6: | 15.1:                 | 17.0: | 4.6:   | 5.9   |
| Apr . . . . :  | 30.6:                  | 33.5: | 16.7:               | 18.7: | 13.7:                 | 15.4: | 16.0:                 | 17.0: | 5.0:   | 5.9   |
| May . . . . :  | 30.7:                  | 33.6: | 16.9:               | 18.7: | 13.5:                 | 15.5: | 16.3:                 | 17.0: | 5.3:   | 5.9   |
| June . . . . : | 31.2:                  | 33.9: | 17.2:               | 18.6: | 13.8:                 | 15.4: | 16.3:                 | 17.3: | 5.4:   | 5.9   |
| July . . . . : | 31.7:                  | 34.2: | 17.7:               | 18.5: | 14.4:                 | 15.4: | 16.4:                 | 17.3: | 5.5:   | 6.0   |
| Aug . . . . :  | 31.9:                  | 34.0: | 17.9:               | 18.2: | 14.8:                 | 15.0: | 16.5:                 | 17.2: | 5.7:   | 6.0   |
| Sept . . . . : | 31.7:                  | 33.5: | 18.4:               | 18.1: | 15.5:                 | 14.8: | 16.5:                 | 17.3: | 5.9:   | 5.9   |
| Oct . . . . :  | 31.8:                  | 33.4: | 18.7:               | 17.8: | 15.9:                 | 14.7: | 16.9:                 | 17.3: | 5.9:   | 6.0   |
| Nov . . . . :  | 32.7:                  | 33.0: | 18.8:               | 17.6: | 15.7:                 | 14.4: | 17.1:                 | 17.5: | 5.9:   | 6.1   |
| Dec . . . . :  | 33.5:                  | 33.1: | 18.9:               | 17.6: | 15.8:                 | 14.6: | 17.1:                 | 18.0: | 5.9:   | 6.6   |
| Average:       | 31.1:                  | 33.6: | 17.3:               | 18.3: | 14.2:                 | 15.2: | 16.0:                 | 17.3: | 5.3:   | 6.0   |

<sup>1</sup> Wholesale prices of butter and cheese; producers' prices of other commodities. Conversions to United States currency made at monthly average rate of exchange.

Compiled from *Jordbruksstatistikk*.

About 90 percent of the Norwegian dairy industry, both production and exporting, is cooperative. The remainder is carried on in the upland grazing areas where summer dairies (*saeters*) are established and where the winter's supply of cheese and butter is made for the farm household. In recent years, however, since country



roads have improved and trucks are commonly used, a large part of the milk is collected daily and brought to the cooperative dairies in the valleys.

About 95 percent of the meat producers belong to the Norwegian Meat and Bacon Central, and all cooperative slaughterhouses and meat factories are affiliated with this organization; so this part of agricultural production, too, is on a cooperative basis. Also, cooperative egg-marketing agencies handle a large part of both domestic and export sales. These cooperative undertakings have been especially helpful to the export trade. Fair prices have been obtained; therefore, a more equitable distribution of the national income to agriculture, the country's most important enterprise, has been possible.

Besides the producer-owned cooperatives for dairy products and for abattoirs, an act of 1928 established a Grain Monopoly for the importation of wheat, rye, barley, and oats, and products that consist largely of grains. This monopoly also directs the exportation of these products, and the same restrictions as to quality that apply to imports also apply to grains and grain products of Norwegian origin. The purposes of the Grain Monopoly are to import the quantities of grains and flour needed to meet domestic requirements; to buy all home-grown grain fit for human food offered by growers; and to sell the products in an advantageous manner. The profits of the monopoly are put into a fund for the regulation of prices.<sup>4 5</sup>

During the present European war emergency, steps have been taken by the Government to conserve the supply of products that must be imported, such as sugar and coffee. Rationing of these products began immediately. Large purchases have been made and stored of necessary raw materials that are not produced in the country, such as cotton and rubber. The Government is also attempting to increase the production of potatoes in the northernmost counties to augment the Nation's food supply. For this purpose grants have been made for the purchase of seed and fertilizers.

#### FOREIGN TRADE - ITS RELATION TO THE UNITED STATES

Norway is on an import basis for many agricultural commodities. The balance of payments would always be adverse if it were not for the services rendered by the great Norwegian mercantile fleet, whose ships are known in every port of the world.

Formerly a large part of Norwegian imports were manufactured products; but, beginning with the extensive development of the electrical industry at the turn of the century, more of the imports have been raw materials to be partly or wholly manufactured in Norway, using the abundant and cheap electrical supply as power. Machinery and other articles needed for production are also imported to a greater extent than formerly. Total imports of consumers' goods have decreased, whereas imports of producers' goods have increased.

<sup>4</sup> *The Norway Yearbook*, 1938. [in English.]

<sup>5</sup> Bjanes, O. T. *op. cit.*

TABLE 13.-Norwegian imports and exports of specified grains, potatoes, and apples,  
1909-1938

| YEAR       | WHEAT <sup>1</sup> |         | RYE <sup>1</sup> |          | BARLEY <sup>2</sup> |         | OATS <sup>3</sup> |          | POTATOES <sup>4</sup> |          | APPLES <sup>5</sup> |         |
|------------|--------------------|---------|------------------|----------|---------------------|---------|-------------------|----------|-----------------------|----------|---------------------|---------|
|            | IMPORTS            | EXPORTS | IMPORTS          | EXPORTS  | IMPORTS             | EXPORTS | IMPORTS           | EXPORTS  | IMPORTS               | EXPORTS  | IMPORTS             | EXPORTS |
| 1909 . . . | 3,273,259:         | 752:    | 9,925,868:       | 155,897: | 5,607,278:          | 29,203: | 1,143,695:        | 22,031:  | 442,539:              | 11,254:  | 50,823:             | 529     |
| 1910 . . . | 3,284,945:         | 1,008:  | 11,511,769:      | 86,363:  | 5,648,946:          | 28,927: | 1,419,239:        | 21,534:  | 447,459:              | 10,173:  | 68,457:             | 51      |
| 1911 . . . | 3,689,077:         | 2,600:  | 11,305,028:      | 40,222:  | 5,163,102:          | 14,284: | 878,678:          | 35,670:  | 419,106:              | 10,248:  | 46,144:             | 3,991   |
| 1912 . . . | 3,088,910          | 1,598:  | 9,228,167:       | 39,918:  | 3,879,207:          | 8,354:  | 822,413:          | 49,574:  | 51,085:               | 44,494:  | 115,239:            | 258     |
| 1913 . . . | 4,234,079          | 7,276:  | 11,088,453:      | 46,384:  | 4,004,540:          | 10,720: | 932,710:          | 30,804:  | 176,277:              | 124,998: | 60,479:             | 1,282   |
| 1914 . . . | 5,455,387:         | 2,826:  | 8,128,357:       | 33,154:  | 4,011,654:          | 6,781:  | 516,584:          | 18,524:  | 173,580:              | 17,079:  | 82,587:             | 81      |
| 1915 . . . | 6,050,905:         | 4,67:   | 7,884,954:       | 8,713:   | 1,368,476:          | 4,401:  | 594,027:          | 8,198:   | 63,841:               | 4,104:   | 74,004:             | 42      |
| 1916 . . . | 7,327,290:         | 1,722:  | 7,328,931:       | 6,816:   | 2,465,509:          | 1,920:  | 797,501:          | 9,736:   | 488,729:              | 5,996:   | 84,854:             | 176     |
| 1917 . . . | 5,313,778:         | 149:    | 5,094,809:       | 267:     | 2,264,095:          | 126:    | 713,265:          | 3,015:   | 189:                  | 1,577:   | 60,836:             | (6)     |
| 1918 . . . | 4,260,018:         | -       | 3,095,192:       | -        | 1,400,593:          | -       | 312,044:          | -        | 412,297:              | 220:     | 6,436:              | 6       |
| 1919 . . . | 7,386,584:         | 17:     | 6,190,427:       | 4,447:   | 782,067:            | 143:    | 512,568:          | 736,284: | 245,013:              | 46,096:  | 424,875:            | 163     |
| 1920 . . . | 5,717,982:         | 20,049: | 8,401,770:       | 9,698:   | 1,211,480:          | 725:    | 60,591:           | 184,205: | 96,577:               | 567,562: | 204,140:            | 133     |
| 1921 . . . | 4,214,127:         | 9,558:  | 4,571,170:       | 22,186:  | 2,114,376:          | 3,984:  | 1,058,776:        | 25,044:  | 498,878:              | 21,052:  | 208,793:            | 294     |
| 1922 . . . | 5,620,829:         | 5,794:  | 6,436,673:       | 21,970:  | 2,271,937:          | 4,970:  | 671,559:          | 13,983:  | 398,096:              | 77,034:  | 327,333:            | 96      |
| 1923 . . . | 5,824,560:         | 13,480: | 7,412,749:       | 42,981:  | 2,524,570:          | 4,226:  | 1,194,707:        | 17,985:  | 8,166:                | 15,297:  | 351,765:            | 58      |
| 1924 . . . | 6,585,666:         | 17,672: | 8,873,978:       | 78,344:  | 3,217,878:          | 4,785:  | 2,292,707:        | 28,958:  | 1,024:                | 104,080: | 188,544:            | 8       |
| 1925 . . . | 5,682,303          | 9,462:  | 7,497,773:       | 50,008:  | 1,522,447:          | 5,866:  | 1,549,019:        | 23,632:  | 157,027:              | 20,010:  | 167,902:            | 412     |
| 1926 . . . | 6,264,279:         | 3,392:  | 7,341,291:       | 33,045:  | 1,971,336:          | 1,023:  | 1,298,726:        | 49,881:  | 1,482:                | 76,468:  | 189,416:            | 480     |
| 1927 . . . | 7,014,879:         | 3,363:  | 7,706,251:       | 23,447:  | 1,951,141:          | 2,855:  | 693,402:          | 57,374:  | 51,592:               | 87,185:  | 249,432:            | 97      |
| 1928 . . . | 7,278,157:         | 6,230:  | 6,257,818:       | 45,992:  | 1,254,598:          | 4,689:  | 273,269:          | 23,725:  | 98,744:               | 14,710:  | 185,791:            | 182     |
| 1929 . . . | 8,024,772:         | 7,657:  | 6,145,013:       | 29,116:  | 1,909,518:          | 4,336:  | 350,509:          | 49,627:  | 2,943:                | 23,767:  | 218,902:            | 35      |
| 1930 . . . | 8,098,717:         | 5,080:  | 6,142,248:       | 18,161:  | 1,989,251:          | 3,931:  | 350,963:          | 21,511:  | 1,493:                | 20,685:  | 169,563:            | 230     |
| 1931 . . . | 8,291,853:         | 20,295: | 6,311,847:       | 29,573:  | 2,425,375:          | 5,726:  | 401,281:          | 23,311:  | 28,236:               | 228,078: | 210,039:            | 53      |
| 1932 . . . | 7,879,695:         | 12,194: | 5,144,944:       | 31,256:  | 896,005:            | 2,526:  | 510,240:          | 26,596:  | 3,479:                | 197,146: | 798:                | 44      |
| 1933 . . . | 8,746,081:         | 9,179:  | 5,404,777:       | 28,983:  | 597,698:            | 1,693:  | 4,206:            | 15,935:  | 28:                   | 57,268:  | 94,342:             | 871     |
| 1934 . . . | 8,390,978:         | 10,504: | 5,420,612:       | 27,025:  | 431,736:            | 3,389:  | 10,175:           | 37,636:  | 19:                   | 44,921:  | 103,893:            | 92      |
| 1935 . . . | 8,917,831:         | 9,237:  | 5,550,502:       | 13,374:  | 583,218:            | 2,397:  | 204,030:          | 14,857:  | 14,692:               | 19,550:  | 111,136:            | 2,234   |
| 1936 . . . | 7,115,744:         | 5,312:  | 4,844,490:       | 10,744:  | 713,988:            | 1,207:  | 17,738:           | 11,867:  | 26:                   | 109,957: | 94,777:             | 490     |
| 1937 . . . | 8,081,532:         | 2,302:  | 5,291,268:       | 7,443:   | 1,276,803:          | 750:    | 415,208:          | 20,506:  | 14:                   | 32,348:  | 116,638:            | 644     |
| 1938 . . . | 8,127,577:         | 4,233:  | 5,187,357:       | 9,266:   | 595,487:            | 692:    | 28,505:           | 6,837:   | 94,571:               | 16,232:  | 230,914:            | 90      |
| 1939 . . . | 8,127,577:         | 4,233:  | 5,187,357:       | 9,266:   | 595,487:            | 692:    | 28,505:           | 6,837:   | 94,571:               | 16,232:  | 230,914:            | 90      |

<sup>1</sup> Includes flour in terms of grain.<sup>2</sup> Includes flour and malt in terms of grain.<sup>3</sup> Includes flour and meal in terms of grain.<sup>4</sup> Includes dried potatoes, 1920-1933.<sup>5</sup> Includes pears and in some years plums, 1909-1931; apples only, 1932-1938.<sup>6</sup> Less than one-half bushel.Compiled from *Norges Handel*.

TABLE 11. Norwegian imports and exports of meats, dairy products, wool, and hides and skins, 1909-1938

| YEAR | MEATS <sup>1</sup> |               | MILK <sup>2</sup> |                | EGGS <sup>3</sup> |           | BUTTER      |               | CHERSE      |             | WOOL <sup>4</sup> |             | HIDES AND SKIN <sup>5</sup> |                |
|------|--------------------|---------------|-------------------|----------------|-------------------|-----------|-------------|---------------|-------------|-------------|-------------------|-------------|-----------------------------|----------------|
|      | IMPORTS            | EXPORTS       | IMPORTS           | EXPORTS        | IMPORTS           | EXPORTS   | IMPORTS     | EXPORTS       | IMPORTS     | EXPORTS     | IMPORTS           | EXPORTS     | IMPORTS                     | EXPORTS        |
| 1909 | 1,000 : 44,507     | 1,000 : 3,714 | 1,000 : 20        | 1,000 : 32,373 | 1,000 : 218       | 1,000 : 4 | 1,000 : 682 | 1,000 : 3,446 | 1,000 : 570 | 1,000 : 265 | 1,000 : 3,553     | 1,000 : 100 | 1,000 : 14,925              | 1,000 : 12,446 |
| 1910 | 40,637             | 4,526         | 35                | 34,658         | 368               | 7         | 789         | 2,739         | 622         | 455         | 3,741             | 109         | 12,139                      | 12,910         |
| 1911 | 42,978             | 2,952         | 54                | 39,541         | 388               | 4         | 501         | 3,679         | 606         | 393         | 3,512             | 110         | 14,030                      | 16,255         |
| 1912 | 40,580             | 3,441         | 77                | 36,247         | 361               | 3         | 1,158       | 3,475         | 633         | 363         | 3,693             | 168         | 15,319                      | 14,432         |
| 1913 | 43,689             | 3,702         | 66                | 43,643         | 598               | 2         | 1,750       | 2,346         | 885         | 410         | 3,720             | 127         | 13,480                      | 13,218         |
| 1914 | 46,490             | 3,393         | 49                | 44,042         | 496               | 14        | 1,169       | 1,575         | 713         | 502         | 3,109             | 97          | 11,107                      | 14,920         |
| 1915 | 42,997             | 4,263         | 25                | 39,152         | 256               | 141       | 74          | 3,607         | 491         | 680         | 4,954             | 162         | 11,359                      | 4,532          |
| 1916 | 56,542             | 2,775         | 30                | 33,056         | 305               | 10        | 87          | 1,027         | 435         | 111         | 4,753             | 345         | 9,849                       | 10,799         |
| 1917 | 70,539             | 364           | 9                 | 23,085         | 945               | 6         | 1,018       | (6)           | 232         | (6)         | 1,260             | 211         | 5,687                       | 1,534          |
| 1918 | 27,654             | 9             | 17                | 1              | 1,297             | -         | 2,498       | (6)           | 223         | (6)         | 758               | 0           | 1,165                       | 356            |
| 1919 | 88,349             | 7,346         | 8,202             | 780            | 3,483             | -         | 8,201       | 2             | 4,927       | 4           | 5,804             | 465         | 11,421                      | 5,172          |
| 1920 | 67,401             | 3,362         | 3,834             | 10,185         | 4,519             | 3         | 8,098       | 5             | 3,147       | 165         | 2,768             | 382         | 6,061                       | 6,608          |
| 1921 | 73,733             | 3,026         | 1,373             | 7,044          | 4,089             | 2         | 7,560       | 29            | 1,157       | 256         | 1,636             | 210         | 6,186                       | 9,009          |
| 1922 | 79,033             | 3,347         | 1,264             | 17,921         | 4,522             | 3         | 7,654       | 14            | 1,540       | 657         | 4,309             | 163         | 8,011                       | 10,587         |
| 1923 | 69,349             | 3,235         | 1,142             | 18,617         | 1,828             | 6         | 5,826       | 26            | 1,962       | 697         | 3,453             | 534         | 9,507                       | 11,371         |
| 1924 | 56,018             | 2,102         | 835               | 16,445         | 92                | 1,092     | 1,276       | 419           | 1,066       | 737         | 2,725             | 717         | 12,216                      | 11,564         |
| 1925 | 52,278             | 2,284         | 1,353             | 21,541         | 127               | 1,129     | 1,467       | 468           | 1,301       | 702         | 1,913             | 368         | 12,852                      | 8,479          |
| 1926 | 38,686             | 3,096         | 1,185             | 29,530         | 126               | 452       | 2,369       | 338           | 1,266       | 757         | 1,761             | 331         | 6,236                       | 10,744         |
| 1927 | 29,542             | 2,644         | 844               | 21,653         | 84                | 98        | 2,511       | 25            | 1,452       | 894         | 2,127             | 554         | 8,601                       | 13,067         |
| 1928 | 33,640             | 3,552         | 766               | 21,049         | 102               | 178       | 1,532       | 82            | 1,094       | 927         | 1,717             | 1,113       | 8,982                       | 12,415         |
| 1929 | 30,705             | 3,957         | 451               | 23,253         | 119               | 995       | 1,352       | 1,191         | 841         | 1,347       | 1,542             | 641         | 8,545                       | 12,716         |
| 1930 | 28,261             | 2,779         | 246               | 18,430         | 114               | 1,056     | 1,529       | 236           | 749         | 1,380       | 1,771             | 214         | 10,902                      | 11,804         |
| 1931 | 21,561             | 2,503         | 305               | 15,040         | 134               | 1,153     | 381         | 1,628         | 562         | 2,905       | 1,835             | 237         | 9,944                       | 10,028         |
| 1932 | 16,498             | 5,318         | 114               | 10,803         | 76                | 2,504     | 91          | 2,429         | 3,644       | 1,995       | 1,807             | 129         | 10,573                      | 11,634         |
| 1933 | 11,074             | 6,849         | 236               | 7,040          | 88                | 2,581     | 146         | 904           | 1,95        | 3,819       | 1,807             | 439         | 8,973                       | 14,745         |
| 1934 | 10,782             | 6,548         | 161               | 5,337          | 76                | 1,522     | 4           | 547           | 217         | 4,430       | 1,928             | 618         | 12,070                      | 13,494         |
| 1935 | 10,988             | 6,818         | 352               | 6,577          | (6)               | 922       | 5           | 416           | 254         | 3,167       | 2,312             | 203         | 10,982                      | 13,709         |
| 1936 | 10,970             | 7,130         | 79                | 6,104          | 4                 | 1,771     | (6)         | 424           | 270         | 3,405       | 2,467             | 301         | 10,790                      | 16,038         |
| 1937 | 13,361             | 6,527         | 90                | 8,350          | 1                 | 1,838     | (6)         | 443           | 3708        | 2,247       | 2,79              | 14,477      | 14,670                      |                |
| 1938 | 11,530             | 4,669         | 89                | 9,067          | 1                 | 2,324     | (6)         | 1,798         | 521         | 3,642       | 1,698             | 294         | 11,894                      | 13,737         |

<sup>1</sup> Includes all meats and meat products.<sup>2</sup> Includes fresh milk and cream, condensed milk, milk powder, and sterilized milk and cream. Of these, condensed milk and sterilized milk form by far the greater part.<sup>3</sup> Eggs in shell only.<sup>4</sup> Includes shoddy, 1914 and 1923-1931.<sup>5</sup> Includes all kinds of hides and skins, both green and dry, of domestic animals only, furs not included.<sup>6</sup> Less than 500.

Compiled from Norges Handel.

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Norwegian imports are far more extensive and diversified than the exports. The largest volume of imports comes from European countries; but wheat is imported from Canada, meat, especially mutton, from Argentina, coffee from Brazil and Central America, fruit from Palestine, and a variety of commodities from the United States.

In 1938 the United States furnished about the following shares of total Norwegian imports: Cottonseed meal, one-third; dried fruits, practically all; rice, one-third; tobacco, three-fourths; cotton, nine-tenths; oils and paints, about one-half; copper, one-half; copper wire, four-fifths; autos and tractors, more than one-half; and radio and broadcasting equipment, fully one-fourth.⁶

The exports of Norway consisted almost entirely of products of the sea and the forest until recent years, when electrochemical and electrometallurgical products have played a large part.⁷

In 1909 the value of total exports from Norway was 234,641,000 kroner (about \$62,790,000), of which products of the sea represented 25 percent, products of the forest 40 percent, electrochemical and metallurgical products 3 percent, and agricultural products 17 percent. In 1920 the value had risen to 1,185,032,000 kroner, with fish and fish products representing 17 percent, products of the forest 48 percent, electrochemical and metallurgical products 12 percent, and agricultural products 6 percent. In 1938 the total value from Norway was 773,776,000 kroner, of which fish and fish products represented 15 percent of the total export value, products of the forest 24 percent, electrochemical and metallurgical products 21 percent, and agricultural products 11 percent. Synthetic nitrate produced by combustion of nitrogen in the air is the most important electrochemical product. The exports of calcium nitrate in 1912 totaled 57,000 short tons. Exports of this product had expanded to 471,000 tons by 1936, and in 1938 totaled 446,000 tons.

Total exports of fish and fish products, fresh, dried, and canned, totaled more than 280,000 short tons in 1938. Of this tonnage, only a little more than 6 percent came to the United States. The largest single item exported to the United States was canned herring, amounting to 9,543 short tons. The United States takes about one-fourth of the cod-liver oil exported from Norway. Large quantities of iodine obtained from seaweed off the west coast are also exported.

Exports of wood pulp alone totaled 357,737 short tons in 1938, of which the United States took only 8 percent. During the past three decades, exports of wood pulp have not varied greatly from this figure. Of Norway's 1933 exports of "wood flour," the United States took 63 percent, or 6,618,000 pounds.

Compared with total agricultural exports from the United States, those going to Norway are a small part of the whole. The value of total exports from the United States in 1938 was \$3,057,169,000 and of this sum the value of exports to Norway was only \$22,466,000, or 0.7 percent of the total. This, however, represents a per-capita importation of American products into Norway of about \$8. Though the

⁶ *Norges Handel*, 1938, pp. 150-179.

⁷ Thomson, Claudia, "Norway's Industrialization," *Economic Geography*, October 1938 pp. 378-379


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United Kingdom, which is the largest importer of American goods, took 17 percent of the total, it was equivalent to only about \$11 per capita. Total exports of agricultural products from the United States in 1938 had a value of \$827,546,000, and of this value \$6,625,000, or 0.8 percent, went to Norway. This represents a per-capita importation of about \$2. Agricultural exports from the United States to the United Kingdom were about 35 percent of the total, or \$6 per capita for that country.

The United States trade with Norway, though not large in volume compared with total United States trade, is important from the standpoint of the proportion of the many different products imported into Norway that comes from the United States. The volume of imports is small principally because of the small Norwegian population, but the stability of the Norwegian market for American goods offsets, in large measure, the small volume.

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✓ From a social point of view, Norway's contribution to agriculture has been the close adherence of the rural population to the soil as a home, demonstrating the possibility of a high standard of living on limited resources. Contentment has been found in an appreciation of the scenic beauty of the country and the great outdoors in the summertime; in valley gatherings, outdoor sports, and dances in the winter; in extensive reading, handicraft work, and, in recent years, the radio. Farm life in Norway has been eased by the widespread use of electricity more than in any other country of the world. Electrical appliances have taken away much of the drudgery of everyday work in many farm homes, and this has given leisure and a broader, fuller life. Norwegian agriculture, so well adapted to the environment and economically successful, points the way to a more wholesome and, at the same time, a simpler way of life.

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CHOSEN'S AGRICULTURE AND ITS PROBLEMS

By W. Ladejinsky*

The agricultural economy of Chosen has been experiencing serious difficulties for a number of years past. The factors underlying these difficulties are manifold, and are by no means confined to such phenomena as economic depressions or price fluctuations. They are rooted more deeply in such fundamentals as a relatively limited and none-too-fertile agricultural land called upon to support a constantly growing population; a rapid rise of tenancy, accompanied more recently by the accumulation in the hands of the Japanese of a considerable acreage of the best land; burdensome conditions under which tenants lease the land; and mounting indebtedness carried at exorbitant interest rates. The combined effect of these conditions spells impoverishment and distress for the Korean countryside. ✓

Chosen (Korea), one of Japan's colonial possessions, is preeminently an agricultural country. Agriculture and the related fields of forestry and fishing provide most of the national income. Industrially, Chosen is one of the most backward units of the Japanese Empire. Whereas in Japan the rural population constitutes about 45 percent of the total, in Chosen 75 percent of the population of 22 million is engaged in agricultural pursuits. Judged by any other standard - whether it be that of provision of the Nation's food, of invested capital, of value of the net output, or of volume of exports - agriculture is Chosen's principal industry. But as in so many agricultural countries, here, too, the predominance of agriculture does not go hand in hand with a prosperous farm population. The very opposite is true, in fact. As a Japanese writer declared, the "suffering of Korean farmers is far greater, and the needs of rural Korea are more serious and urgent than generally known in Japan proper."¹

Since the occupation of Chosen by Japan in 1910, the former has been, among other things, Japan's "convenient bread basket." In recent years Japanese imports of rice have constituted approximately one-fifth of the total requirements: about 13 percent of the shortage has been made up of Korean rice. In this way Chosen has ✓ been instrumental in solving Japan's food problem, even though this solution has had, on many occasions, a disastrous effect upon the fortunes of the Japanese rice producers.

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¹ Uenoda, Setsuo, "Korean Administration Teaches Farm Hands to Help Themselves," *The Trans-Pacific*, April 26, 1934.



Figure 1.

For the Korean farmers, too, expansion of acreage under rice has hardly been a blessing. The Korean rice shipped to Japan is not a surplus left over after the food needs of the Korean population have been satisfied. It has been estimated that "between the winter and spring seasons, some 40 per cent. of the Korean farmers still have insufficient rice for their own needs."² Hence the so-called "spring suffering," in the course of which most of the tenants and part owners, who constitute 80 percent of the total number of farm households, "have been short of food and had to maintain life by searching for edible weeds, roots, and bark on the hillsides."³

PHYSICAL ENVIRONMENT

GEOGRAPHY AND TOPOGRAPHY

Chosen is a peninsula of approximately 85,000 square miles, slightly larger than Kansas, or about two-thirds the area of Japan proper. The longest distance from north to south is 463 miles, and the widest point from east to west is 170 miles. In the north the country is separated from Manchuria by the Yalu River, while the extreme northeastern corner is bounded by the maritime region of the Soviet Far East. On the east, Chosen is washed by the Sea of Japan and on the west by the Yellow Sea. On the south it faces Japan across the Korean Straits.

The country is largely mountainous: in fact, nearly three-fourths of Chosen is hilly and a great deal of it does not lend itself to cultivation. This is particularly true of the northern and eastern parts. It is in the valleys and level areas of the west and south that most of the country's agriculture is concentrated.

CLIMATE

Despite the fact that Chosen is bounded by the sea on three sides, the climate of the country is continental rather than oceanic. The winters are cold and dry, the summers are hot and humid, and the springs and autumns are short but delightful. There is no considerable diversity in summer temperature throughout the country, but a great difference in the winter is noted between the north and south, where the oceanic influence is felt most.

The rainfall in Chosen is more abundant than in Manchuria but scantier than in Japan proper and for the most part ranges from an average of 31 inches in the northern part of the peninsula to 47 inches in the south. On the whole, this amount of precipitation and its seasonal distribution is adequate for the cultivation of crops in Chosen. Rice plants in paddy fields have on occasion suffered from drought, but this situation has been gradually improved by the growing development of irrigation facilities.

² Muto, Yoichi, "New Economic Trends in Korea," *Contemporary Japan*, September 1936, p. 206.

³ *Annual Report on Administration of Iyosen, 1936-37*. Compiled by the Government-General of Chosen, Keijo, December 1937, p. 213.

SOILS AND FARM PRACTICES

The soils of Chosen are none too fertile. They are deficient in nitrogen and organic matter. In this respect they are even poorer than the Japanese soils. In Chosen, therefore, as in Japan, only liberal applications of manure and artificial fertilizers could keep the productivity of the soil at a relatively high level.

The Korean methods of working the land are quite similar to those prevailing in Japan, China, and, to a lesser extent, Manchuria. Korean farmers, too, aim to receive a maximum return from a unit of land through the intensive application of human labor and a minimum expenditure of capital in the form of animal power and modern agricultural equipment. Plowing is done by animals, but seeding, weeding, harvesting, and threshing are carried out entirely by hand. The equipment used is crude, made of wood, and reinforced by small pieces of metal. The efficiency of the implements is low, but the poverty-stricken Korean farmers are in no position to acquire modern mechanical equipment. Their farming practices are characterized by irregular crop rotation, and they are behind the Japanese farmers in the use of manure and fertilizers.

TABLE 1. *Acreage, production, and value of specified crops in Chosen, 1935*

| CROPS | ACREAGE | PRODUCTION | | VALUE |
|-------------------|-------------|------------|------------|------------------------|
| | | UNIT | QUANTITY | |
| | 1,000 acres | | Thousands | 1,000 yen ¹ |
| Rice | 4,153 | Bushels | 162,661 | 489,572 |
| Barley | 2,149 | do. | 43,714 | 73,347 |
| Naked barley ... | 399 | do. | 10,365 | 21,169 |
| Wheat | 800 | do. | 9,748 | 24,505 |
| Oats | 287 | do. | 2,271 | 2,591 |
| Millet | 2,160 | do. | 29,199 | 62,485 |
| Other cereals ... | 804 | do. | - | 19,800 |
| Soybeans | 1,941 | do. | 20,738 | 60,239 |
| Other beans | 672 | Pounds | 339,018 | 16,596 |
| Potatoes | 332 | do. | 17,918,716 | 28,312 |
| Radishes | 153 | do. | 13,535,115 | 12,667 |
| Cotton | 514 | Bales | 188 | 36,316 |
| Hemp | 66 | Pounds | 41,953 | 6,218 |
| Tobacco | 40 | do. | 48,327 | 7,348,796 |
| Ginseng | - | do. | 13,446 | 2,639 |
| Fruits | - | do. | 226,939 | 10,565 |
| Cocoons | - | do. | 45,000 | 16,038 |

¹ At current rate of exchange a yen is worth about 23 cents.

² of which 1 519,000 is barnyard and 354,000 proso millet.

³ 1938 crop

SCARCITY OF ARABLE LAND

A basic feature of Korean agricultural economy is the scarcity of arable area in relation to the growing farm population, which finds no outlet in other occupations. The area under crops, it is true, has increased from about 6 million acres in 1910 to 12 million in 1938. It is to be noted, however, that most of the expansion took place during the first decade, by the end of which the crop area amounted to 10 million acres. The increase since then has been less rapid, and recently the area has remained stationary. At present, practically every patch of land that can be cropped - not excluding hillsides and mountain summits - has been put to use.

True enough, it has been pointed out that, "there ought to be further room for cultivation of marshes and mountainslopes, so that the Government of Korea estimates the possible area of land considered fit for utilization in the future as 1,411,000 *cho* [3,457,000 acres]. According to careful observation of the physical conditions and other circumstances of the country, however, we can hardly expect any great increase in the arable land area in the future, as the present area under cultivation has already reached about twenty per cent of the total area of the peninsula. The expansion of farm land to the extent of 1,411,000 *cho*, as estimated by the Government of Korea, will be a matter of considerable difficulty at any rate."⁴ It may be concluded, therefore, that the land under cultivation in Chosen will show no perceptible increase in the near future.

RICE - THE LEADING CROP

The question to consider is the manner in which the Korean farmers are utilizing the land. Approximately one-third of the acreage consists of paddy fields, one-tenth of "fire fields,"⁵ and the balance of ordinary dry fields. A considerable variety of crops is raised on this land, the principal ones being rice, barley, wheat, millet, soybeans, potatoes, tobacco, cotton, cocoons, and various fruits.

The rice crop is the mainstay of Chosen's agricultural economy from the standpoint of acreage, volume of production, value, and place in the country's total export trade. The importance of the rice crop has become particularly pronounced since 1910. In that year the area under rice totaled 3,307,000 acres, yielding a crop of 94 million bushels (rough rice). A decade later the respective figures were 3,812,000 acres and 134 million bushels; the average annual rice area during the period 1934-1938 was 4,071,000 acres, or about one-third of all the cultivated land, with an average annual production of 191 million bushels. Thus, while the rice acreage during the period under consideration increased 23 percent, the total output practically doubled. This is accounted for by increased yields, which were especially noteworthy in the past 5 or 6 years. The 1921-1925 average annual yield was 34.4 bushels of rough rice per acre as against 28.5 in 1910, or an increase of 21 percent. During 1931-1935 the annual yield rose to 37.4 bushels, a 31 percent

⁴ Nasu, S., *Land Utilization in Japan*, published by the Institute of Pacific Relations, Tokyo, 1929, p. 224.

⁵ Land cleared for cultivation by burning down the forest or brush.

increase over that of 1910. The average annual yield during 1936-1938 reached a high of 53 bushels per acre. Notwithstanding this progress, the fact remains that, barring exceptionally favorable years, the rice yields in Chosen are only half as large as those in Japan. It is held, therefore, that there is room for a further rise in yield, provided the farmers utilize greater quantities of artificial fertilizer.

Vastly greater than the increase in acreage has been the increase in the volume of Korean exports of rice to Japan; whereas in 1910 they amounted to only 5 million bushels (rough), the annual exports during 1934-1938 averaged close to 80 million bushels, or a sixteenfold increase. This volume represents also 43 percent of the average yearly output of the past 5 years.

TABLE 2.—*Acreage, production, and yield of rice in Chosen, 1910-1938*

| YEAR | ACREAGE | PRODUCTION (ROUGH RICE) | YIELD PER ACRE |
|-----------------------|--------------|----------------------------|-------------------|
| | <i>Acres</i> | <i>1,000 bushels</i> | <i>Bushels</i> |
| 1910 | 3,307,000 | 94,500 | 28.5 |
| 1920 | 3,811,831 | 134,288 | 35.2 |
| Average: | | | |
| 1921-25 | 3,823,496 | 131,886 | 34.4 |
| 1926-30 | 3,922,184 | 143,692 | 36.6 |
| 1931 | 4,103,967 | 144,363 | 35.2 |
| 1932 | 4,027,000 | 148,663 | 36.9 |
| 1933 | 4,159,975 | 165,461 | 39.8 |
| 1934 | 4,195,473 | 152,041 | 36.2 |
| 1935 | 4,152,807 | 162,661 | 39.2 |
| Average 1931-35 | 4,127,925 | 154,630 | 37.5 |
| 1936 | 3,924,392 | 176,539 | 45.0 |
| 1937 | 4,016,984 | 243,715 | 60.7 |
| 1938 | 4,067,821 | 219,540 | 54.0 |
| Average 1936-38 | 4,003,065 | 213,264 | 53.3 |
| | | | |

Compiled from official records.

CHOSEN AND THE JAPANESE RICE PROBLEM

The augmentation of Korean output and exports is closely related to the rice problem in Japan proper. Prior to 1895 the production of rice in Japan was sufficient to meet domestic needs, as well as to provide an export surplus. Since then Japan has changed from a rice-exporting to a rice-importing country. The trend in this direction has been most marked during the past 20 years. This cannot be attributed to a decline in Japanese rice production, since domestic output has been steadily expanding. It is due to the fact that the increased output of rice in Japan has been outstripped by the increase in population and the rising per-capita consumption. In recent years, in fact, Japan's rice output has been about 20 percent short of domestic requirements.


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To meet this deficiency and to insure the country of a sufficient supply of rice in time to come, Japan launched upon a long campaign of increasing Chosen's output of this cereal. The nature of the problem and the methods followed were stated in a publication of the Government-General of Chosen in this way: "In our Japanese food supply, rice, the principal article of consumption, tends to be short year after year. As a step toward the solution of this problem, the Imperial Government is doing all it can to increase rice production - by effective enforcement of the Land Re-adjustment Law, by promulgation of the Reclamation Law, and by trying to improve agricultural techniques in every way. In spite of all these efforts, the increase in rice production clearly does not suffice to meet the demand in the near future. In view of these facts, and in order not only to help solve the Empire's food problem but specifically also to develop the economy of Korea, the Government-General of Chosen planned in 1919 to have about 1,950,000 acres of paddy field reclaimed and improved within thirty years. As a first instalment, the Government is trying to complete such work on about a million acres in fifteen years. In this way and counting also on an increase of the yield by improved techniques of production, approximately 45,530,000 bushels of rice are to be added to the total annual output in that period. This is the so-called 'More Rice' project in Korea which has been under way since 1920."<sup>6</sup>



Figure 2.-Korean rice fields waving gold in Autumn.

More concretely, better methods of cultivation were introduced from Japan, including increased application of fertilizers and the use of Japanese seed. The yield was thus raised and the quality of rice improved to suit the palate of the Japanese.

<sup>6</sup> *The Land Amelioration Undertaking in Korea*, November 1928, p. 4. Published by Government-General of Chosen and quoted by Hoon K. Lee in *Land Utilization and Rural Economy in Korea*, University of Chicago Press, p. 123.

## IRRIGATION

Great emphasis has also been placed by the Japanese upon reclamation and irrigation work in Chosen in order to increase agricultural production. Whereas in 1918 there were 800,000 acres under irrigation, in 1937 this figure had risen to 2,883,000 acres, or 69 percent of the total rice area.

Formerly irrigation works were constructed only by communal associations and by individuals, but since the promulgation of the Chosen Irrigation Guild Ordinance on July 17, 1917, such work has been carried on also on a large scale and with official backing by formally organized groups. On March 31, 1937, Chosen had 190 irrigation associations, serving 530,000 acres, with an investment of 139 million yen. The financial assistance of the Government-General in the decade of 1928-1937 ran from a yearly minimum of over 1 million to a maximum of 4 million yen.

Irrigation projects were instrumental in raising the volume of agricultural output, but increased production does not necessarily mean greater prosperity. The numerous complaints by the Korean farmers against the irrigation projects testify to that. The basic problem here is one of the cost of irrigation as against returns derived from that improvement. Irrigation societies receive their income from annual assessments on the irrigated land, as well as from assessments on buildings protected from flood damage by the irrigation and drainage works. The rates depend upon the services received by the member of the guild, but the average annual assessments on land from 1928 to 1937 was 51 yen per *cho* or \$5.35 per acre. But the increased output achieved at this cost could not compensate for the diminished prices of rice occasioned by the agricultural depression. The following resolution of the All Chosen Farmers' Conference, adopted November 11, 1930, is pertinent to this discussion:

"Resolution 3. Cut down the fees of the Irrigation Associations.

"There is no question that the irrigation works are intended entirely for the purpose of increasing the rice production of Korea. But the decline in the price of rice has driven the irrigation associations into a sad predicament. They have become the objects of complaint by the landlords concerned; and it is to be feared that this growing antagonism may develop into a grave social question. We hope, therefore, that the Government-General will take the measures of relief and protection for Irrigation Associations suggested in the policies briefly outlined below:

"1. *In regard to Irrigation Associations already organized:*

- A. All debts incurred by these associations should be replaced by the Low Rate Interest Fund.
- B. The dates of repayment should be extended.
- C. Subsidies should be given to those associations which cannot stand by themselves, even when relieved by the two methods mentioned above."

## EFFECTS OF RICE-EXPANSION POLICIES

From the point of view of solving the food-supply problem of Japan, the measures adopted by the Japanese in Chosen have been eminently successful. As noted already, Korean acreage under rice increased considerably, the output doubled, and exports of rice to Japan skyrocketed. This development, however, has had its negative aspects for both the Japanese and the Korean farmers.

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On Japanese farmers -An important feature in connection with rice consumption in Japan is that the people prefer Japanese rice. The home-grown cereal, with very few exceptions, is so different in taste that it is unlike the kinds of rice produced in foreign countries. Japanese rice is produced at a very high cost and sold at a high price, but the Japanese consumer finds foreign rice so unpalatable that the high price of the home-grown variety can hardly be reduced by imports. Rice produced in Chosen (as well as in Taiwan) is not classed as foreign rice, one of the reasons being that in taste it approaches that produced in Japan proper. Furthermore, Korean rice is produced at lower cost than Japanese. These features of Korean rice have succeeded in undermining the monopolistic position of Japanese rice. The ever-increasing volumes of Korean rice reaching the Japanese market right after the harvest have had a depressing effect upon the price of the commodity; in years of good crops, the imported Korean rice has forced the price down to a level well below that of the cost of production in Japan, thereby causing economic distress to the Japanese rice producers.

The Japanese Government has rejected the pleas of the Japanese farmers to restrict imports of Korean rice. Such direct action would go counter to the policy hitherto pursued by Japan and was bound to create new political and economic problems that would vex the Government a great deal. On the other hand, the Japanese Government held that Chosen was suffering from an overproduction of rice and decided to combat that indirectly by suspending its incompleated program of enlarging rice production. The Government-General of Chosen eliminated from its 1934-35 budget the 16,000,000 yen set aside for rice-land reclamation, and took steps to change the basic character of Korean agriculture. The essence of these measures is summarized in the slogan coined by the Government-General in 1934: "Cotton in the South, Wool in the North." Aside from this, the Japanese Government has been careful not to discriminate against Korean rice. The measures applied to the Japanese producers under the Autonomous Rice Control Law of March 28, 1936, extend to the Korean rice producers as well.⁷

On Korean farmers - Perhaps of greater importance is the effect of the Japanese policies of expanding Korean rice production upon the welfare of the Korean farmers themselves. It may be recalled in this connection that Japan aimed "(1) to help solve the problem of food-supply in Japan Proper, (2) simultaneously to meet the increased demand for food in Korea in the future; and (3) to improve the Korean peasant's economic position and consequently to further the economic development of Korea as a whole."⁸ The first objective has been attained; have the other two as well?

The impoverished state of Korean farmers does not answer fully the above query. To do so, it is necessary to show not only what the existing standard of living is, but whether it has been rising, falling, or remaining stationary. The lack of adequate data, over a period of years, dealing with the various aspects of the rural economy of Chosen makes such an inquiry difficult. It is possible, however, to gain some information on the subject from changes in the consumption of rice in Chosen.

⁷ *Foreign Agriculture*, February 1939, pp. 59-60.

⁸ Nasu, S. *op. cit.*, p. 230.

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For a Korean, as for a Japanese, rice is not only the basic food staple, but an index of the standard of living. The more rice he consumes the higher his standard of living, and vice versa. This is agreed to by all authorities. But since the annexation of Chosen by Japan, Korean farmers have been eating less and less rice. See table 3. Despite the rise in output, many Korean farmers suffer from a shortage of rice.

From 1912 to 1936, rice production doubled, population increased 43 percent, and total volume of consumption showed a slightly downward trend, particularly since 1931. The average yearly per-capita consumption has been reduced from 220 pounds during the period 1912-1916 to 139 during the years 1932-1936, a decline of 37 percent. In Japan, on the other hand, the per-capita consumption has remained stationary, or nearly double that in Chosen.

The reduced consumption in Chosen is caused by the fact that Korean farmers cannot afford to eat the rice they produce; they must export more than 40 percent of the crop and purchase the cheaper and less palatable grains instead. This accounts for the nearly 40-percent increase in the per-capita consumption of millet. If the Korean farmers were economically able to consume all the rice they wanted, the augmented output would be sufficient only to take care of domestic needs. It is this declining consumption of rice on the part of the Korean farmers that insures Japan proper with an ample food supply.

TABLE 3.—Consumption of rice in Chosen, 1936 with comparisons  
[Cleaned]

| YEAR            | POPULATION | CONSUMPTION    |            |
|-----------------|------------|----------------|------------|
|                 |            | TOTAL          | PER-CAPITA |
| Average:        | Thousands  | Million pounds | Pounds     |
| 1912-1916 ..... | 15,829     | 3,480          | 220        |
| 1917-1921 ..... | 17,124     | 3,701          | 216        |
| 1922-1926 ..... | 18,340     | 3,340          | 182        |
| 1927 .....      | 19,138     | 3,149          | 165        |
| 1928 .....      | 19,190     | 3,465          | 181        |
| 1929 .....      | 19,311     | 2,588          | 134        |
| 1930 .....      | 20,257     | 2,927          | 144        |
| 1931 .....      | 20,263     | 3,534          | 174        |
| 1932 .....      | 20,600     | 2,750          | 133        |
| 1933 .....      | 20,791     | 2,768          | 133        |
| 1934 .....      | 21,126     | 2,918          | 138        |
| 1935 .....      | 21,891     | 2,953          | 135        |
| 1936 .....      | 22,048     | 3,458          | 157        |
| :               | :          | :              | :          |
| :               | :          | :              | :          |

Annual statistical reports of the Government-General of Chosen; *Résumé Statistique de L'Empire du Japon*; *Japan-Manchoukuo Year Book*.



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OTHER CROPS

BARLEY

After rice, barley is the most important crop of Chosen, both by virtue of acreage and as a staple food of the country, particularly of the poorer groups. It is cultivated all over the country, being sown in the spring in the south and in the autumn in the north. Barley is favored by the farmers in the south for "double cropping," where it is used as a second crop in the same field in which a rice crop has been raised. In view of its importance as an article of food, great efforts have been made to expand acreage and raise the output. The area under barley has increased from 900,000 acres (annual average 1909-1913) to 2,468,000 acres (annual average 1934-1938), and the output from 19 million to 34 million bushels. The yield per acre in recent years has been about the same as that during 1909-1913, although it was lower in the twenties. It would seem that augmented output is due solely to the enlarged crop area.

WHEAT

Wheat in Chosen is planted chiefly for home consumption. In the south wheat is sown in the fall, and in the north in the spring. The soil and climate of the southern Provinces of Chosen are rather more favorable for the growth of barley than of wheat; it is in the northern part of the country with its continental climate that the greater volume of wheat is grown. It may be noted that in southern Chosen wheat is raised in paddy fields after the rice is harvested. In line with the general policy of expanding agricultural production, the wheat area increased from an annual average of 369,000 acres (1909-1913) to 871,000 acres in 1920. Since then, however, the area under wheat, with the exception of the period 1926-1928, has declined somewhat. The average area sown to wheat during 1934-1938 amounted to 820,000 acres. The wheat output has increased from an average of 4,589,000 bushels in 1909-1913 to an average of 12,000,000 bushels in 1934-1938. This increase was due primarily to larger acreage rather than to higher yield.

SOYBEANS ✓

Next to rice, soybeans form the most important export item among Korean agricultural products. They are shipped chiefly to Japan, where they are used not only for food but also for a great variety of other purposes, chiefly industrial. The 1937 bean area was 1,929,000 acres, or 61 percent larger than in 1910; the volume of production amounted to nearly 23 million bushels, which is a 64-percent increase over that of 1910. Data concerning the value of the 1937 crop are not available, but the 1935 crop of a somewhat smaller volume was estimated at 60 million yen.

MILLET

Millet is of great importance among the cereals grown in the country. Because many Korean farmers cannot afford to eat the rice they produce, millet is for

most what rice is for the Japanese people. This crop is cultivated largely in the north. In 1937 the land under millet amounted to 1,911,000 acres, yielding a crop of approximately 30 million bushels. Domestic supplies do not suffice to meet the millet requirements of the Korean people. The shortage of about 10 million bushels is imported mainly from Manchuria.

SERICULTURE

Sericulture in Chosen is the leading subsidiary industry engaged in by farmers, and it constitutes a large part of their cash income. The climate and soil of Chosen are well adapted for the raising of cocoons. Before the Japanese annexation of Chosen, not much progress was made in sericulture because the species reared were of inferior kinds; the methods of rearing cocoons were very primitive; and the cultivation of mulberry trees, on the leaves of which they feed, received little if any attention. As a result, the cocoons were poor in quality and small in quantity.

Since the annexation, Japan has been introducing silkworm eggs of a superior kind, distributing mulberry seedlings, giving instructions in the care of silkworms and such advice concerning every other phase of sericulture as is likely to improve both quality and quantity of cocoons. This encouragement has brought about marked progress in the industry's development during the past three decades. Whereas in 1910 the number of farm families engaged in raising cocoons was estimated at 76,000 and the quantity of cocoons gathered was about 1 million pounds, in 1938 there were more than 800,000 such families, producing 45 million pounds of cocoons.

TOBACCO

The soil and climate of Chosen are in general well adapted for the growing of tobacco. It is produced in many small districts scattered throughout the country. The one exception is flue-cured tobacco, which is concentrated in a single area near the center of the peninsula. The area per individual grower is always small, averaging about one-fourth of an acre. Until early in the century Chosen produced only native types of tobacco. Measures for improving the tobacco were undertaken in 1905 through the experimental growing of Japanese and other foreign strains on a number of model farms. After the successful completion of this work, experts were dispatched to the main producing regions to introduce the cultivation of new species of tobacco. At present three general types of tobacco are grown in Chosen - native, flue-cured from American seed, and Japanese. Tobacco acreage and production have been gradually expanding. In 1931 the total area under tobacco amounted to 37,329 acres as against 48,275 acres in 1938, an increase of 29 percent. Output as a result of higher yields has made even greater strides forward, the respective productions being 37.3 million and 64.5 million pounds, an increase of 73 percent. Nearly 11 million pounds of the total 1938 output was flue-cured tobacco. Chosen now supplies about one-eighth of the Empire's production of this type and most of the flue-cured not furnished by Japan proper.

In Japan, as in many other countries, strenuous efforts are being made to achieve self-sufficiency and dispense with imported tobacco altogether. The scarcity

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of arable land in Japan proper and strong competition of food crops for the land preclude a large increase in tobacco acreage. Japan has been encouraging expansion of tobacco acreage in Chosen and Taiwan, particularly the former. In line with this is the 10-year program inaugurated in 1937 that called for an increase of the tobacco area to 147,000 acres and production to 198 million pounds by 1947. This ambitious program was drastically revised in 1939, and the planned area under tobacco reduced to 64,000 acres. Until very recently most of the Japanese imports of flue-cured tobacco have come from the United States. For this reason the plans of expanding tobacco production, and particularly that of flue-cured, in Chosen will affect the United States more than any other country. The surplus of the Korean tobacco crop is intended for Japan, and the greater that surplus the smaller will be Japan's takings of American tobacco, assuming that the Korean flue-cured will be used in place of American in spite of its inferior quality.



Figure 3.—Tobacco plants at maturity in Chosen.

Even a brief account of the Korean tobacco crop would be incomplete without touching upon the country's Tobacco Monopoly, because of the latter's all-important effects upon the development of the industry. When the monopoly was first organized in 1921, the control of the Government extended to commercial production of leaf and manufacture of cigarettes, while farmers were permitted to grow tobacco for their own use and private concerns had the right to manufacture cut tobacco. In the course of years, however, the monopoly assumed complete control of every phase of activity connected with tobacco, from the time the seeds were planted until the finished product reached the consumer.

According to an American tobacco specialist, "They [tobacco monopoly bureaus] operate on the principle that the tobacco farmer is a member of the monopoly organization. The farmer is required to spend a definite amount of money and time in producing tobacco for which the monopoly pays prescribed prices. Each monopoly also guarantees a fixed payment per acre in the event of total or partial crop

failure resulting from storms, floods, etc. \* \* \* Each year the monopoly determines the total acreage to be planted to tobacco of different types. The acreage for each type is then prorated among the different tobacco associations in accordance with their previous allotted acreage and the amount of land owned by members of the association that is suitable for production of the type. The allotted acreage of an association is subdivided among its members in proportion to their previous allotment and the amount of suitable land they own. Each producer is given a license, which permits him to grow a fixed acreage of tobacco on a certain farm. \* \* \* Seed of the type of tobacco desired for production is furnished to the farmer by the monopoly. Dates when seed beds are to be planted, when plants are to be transplanted to fields, when they must be topped, and when harvesting should be begun, are all fixed by the monopoly. Cultural, harvesting, and curing practices are established by the monopoly."<sup>9</sup>

The monopoly has succeeded in improving the quality of domestic flue-cured tobacco, but it is inferior to the American product. In Chosen, and even more so in Japan, consumers prefer the better-quality imported tobacco, but with strict regulations imposed by the monopoly, they have no choice but to smoke the kinds made available by this institution.

#### COTTON

Cotton cultivation in Chosen has been carried on from early times, but until quite recently production was barely sufficient to satisfy the relatively small domestic needs. While the soil in southern Chosen is suitable for cotton growing, the methods of cultivation remained primitive for a long time and the varieties grown were of low grade. The climate of Chosen has both favorable and unfavorable aspects for cotton growing. Among the favorable conditions are an exceptional amount of sunshine and a high temperature in the summer, ample rain during the growing stage, dry weather when the bolls open in autumn, and a severe winter, which kills injurious insects. On the other hand, droughts sometimes occur in April and May, which delay or prevent planting; early frost at times kills the plant; there is occasional excessive precipitation during the rainy season; and damage from pink bollworms is frequent.<sup>10</sup>

In 1906 a Government cotton plantation was established to carry on experimental work with improved species of American cotton, and after a few years of such experimentation Japan became unstinting in its efforts to increase the acreage under cotton, as well as to improve its quality. The Government-General of Chosen proceeded to carry out these aims through a number of long-range plans. In 1912 a 6-year program was introduced in order to enlarge the cotton area to 245,000 acres. This was followed up with a 10-year program, beginning in 1919, with a view to raising the total cotton area to 613,000 acres and production to approximately 230,000

<sup>9</sup> Gibbs, I. Barnard. *Tobacco Production and Consumption in the Japanese Empire*, F. S. 80, Office of Foreign Agricultural Relations, January 1940, pp. 6-7.

<sup>10</sup> Langdon, William R. American consul at Mukden, Manchuria, in a report entitled *Program for Increased Cotton Production in Chosen*.



bales. Cotton experts were sent to principal cotton districts; cotton cultivation guilds were formed; improved cotton seeds were distributed free; and purchases of fertilizers for application on cotton fields were subsidized by the Government.

In consequence of these measures, cotton acreage and output have shown a marked increase, even though the actual results, particularly with respect to output, were below expectations. In 1910 the area under cotton was 147,000 acres, yielding a crop of only 13,000 bales (of 473 pounds). The respective figures for 1929 were 456,000 acres and 138,000 bales. The considerable rise in production was caused not so much by the acreage expansion as by the tripling of yield per acre: namely, from about 42 pounds to 145 pounds. It is of interest to note that in 1910 the bulk of the cotton consisted of native species, whereas in 1929 three-fourths of it was made up of improved Upland varieties. In quality the latter correspond to low-grade American and are considered fit only for spinning low counts of yarn.

Early in the thirties Japan decided to inaugurate the third and most ambitious plan to expand cotton production in Chosen. A number of factors were responsible for this move. The volume of Korean cotton production in the late twenties was such that only a small quantity could be exported to Japan. At this very period, however, Japanese needs for cotton were mounting very rapidly, and its dependence upon American and Indian were growing accordingly. Hence, the desire to lessen this dependence and to get some cotton from a source near at hand came into play as well as the need for "rationalizing" Chosen's agriculture to prevent overproduction of rice. As a partial solution of these problems, the 20-year cotton program was inaugurated in Chosen in 1933. By 1938 the total area under cotton was to range from 1,225,000 to 1,470,000 acres, yielding a crop of between 645,000 and 807,000 bales. This was to provide an exportable surplus of from 400,000 to 500,000 bales for the Japanese spinning industry.

TABLE 4. *Acreage, production, and yield of cotton in Chosen, 1910-1938*

| YEAR            | ACREAGE     | PRODUCTION               | YIELD PER ACRE |
|-----------------|-------------|--------------------------|----------------|
|                 | 1,000 acres | 1,000 bales <sup>1</sup> | Pounds         |
| 1910 .....      | 147         | 13                       | 42             |
| Average:        |             |                          |                |
| 1920-1924 ..... | 370         | 104                      | 134            |
| 1925-1929 ..... | 495         | 138                      | 133            |
| 1930 .....      | 473         | 149                      | 151            |
| 1931 .....      | 479         | 101                      | 101            |
| 1932 .....      | 390         | 134                      | 164            |
| 1933 .....      | 432         | 138                      | 153            |
| 1934 .....      | 474         | 136                      | 137            |
| 1935 .....      | 514         | 188                      | 175            |
| 1936 .....      | 561         | 209                      | 178            |
| 1937 .....      | 547         | 214                      | 187            |
| 1938 .....      | 577         | 187                      | 155            |

<sup>1</sup> Of 473 pounds.

Compiled from official sources

In the 5 years since the cotton plan was inaugurated the area has increased by 145,000 acres and production by some 50,000 bales. The annual average per-acre yield during 1934-1938 was 166 pounds, or higher than in any previous period. Yet the successful realization of the whole program is doubtful. Even if acreage and production in the next 15 years should show a rise comparable to that of 1934-1938, they will fall short of the planned figures. Moreover, the agricultural economy of Chosen is attuned to the production of rice, whereas cotton cultivation requires greater effort and is more hazardous than rice growing because of the uncertain climatic conditions. Practically the entire arable land of Chosen is already under cultivation, and any shift to cotton leads to a corresponding decrease in food crops, chiefly rice. Since in planting crops the farmer seeks the greatest economic advantage, cotton prices would have to be very high indeed to induce him to cultivate an uncertain cotton crop in place of rice and other food crops with their greater cash certainty.

### THE PROBLEM OF LAND TENURE

#### SMALL-SCALE FARMING

The total crop area of Chosen is distributed among 3 million households, or an average of about 4 acres per household. This is considerably larger than the average of 2.5 acres per farm family in Japan, yet it is clear that in Chosen, as well as in Japan, agriculture is carried on on a very small scale. The scarcity of new arable land, in conjunction with a growing farm population, is tending to reduce the individual holdings still further. Thus, according to a Korean student of the problem, "land is so scarce that almost no farmer can cultivate as much land as he wishes to, and yet the acreage of arable land per farm household is declining."<sup>11</sup>

In the course of the years 1910-1930 the acreage of arable land per farm household declined by 10 percent.<sup>12</sup> Chosen, too, although to a somewhat lesser extent than Japan proper, is faced with the problem of many people on little land, and not rich land at that. It may be noted also that, whereas in Japan the proportion of the total farm income represented by income from subsidiary occupations ranged from 23 to 31 percent, in Chosen this item is of little significance because not more than 10 percent of the farmers derive any income from nonagricultural occupations.

#### UNEQUAL DISTRIBUTION OF LAND

The problem stated above is aggravated by the unequal distribution of the available land among the Korean farmers. The theoretical average of 4 acres per farm family has little relation to the amount of land actually cultivated or owned by individual farmers. According to an official report of the Government-General of Chosen, published in 1933, fully 63 percent of all the farm households cultivate

<sup>11</sup> Lee, Hoon K. *Op. Cit.*, p. 109.

<sup>12</sup> *Ibid.*, p. 120.

less than 2.4 acres each; and more than a third of this group cultivate less than 1.2 acres. Farmers working from 2.4 to 4.9 acres made up 21 percent of the total; and all others cultivate 5 acres or more. Only 457 households cultivate more than 50 acres each. These figures suggest that the amount of land cultivated by the great majority of the farmers is often not large enough to provide the farmer with the bare necessities. This becomes even more apparent upon the examination of the question of landownership in Chosen.

The amount of land cultivated by a farmer often gives little indication of the amount of land owned by him. This is particularly true of Korean farmers. A study, prepared a decade ago,<sup>13</sup> of the Korean farming population (2,800,000 households) by classes sheds revealing light on this subject. Thus 104,000 landlords, who comprised less than 4 percent of the total number of the households, owned 54.5 percent of all the arable land and two-thirds of the rice fields. Next in importance was the group of owner-cultivators, consisting of 510,000 households - or 18 percent of the total - each one owning somewhat less than 5 acres per family. The balance of the land was distributed among the owner-tenants - or 32 percent of all the farm families - who owned so little land that they were forced to enlarge their crop area by leasing some land from the landlords. In many cases the land owned by these farmers was so heavily mortgaged that the ownership was a purely nominal one. At the bottom of the scale were the tenants - or 46 percent of all farm householders - who owned no land at all and were renting an average of 3 acres per family. More recently, tenants have accounted for nearly half of the total. If the owner-tenants were added to this group, then, four out of every five Korean farmers would be tenants or semitenants. This situation has few counterparts in the world.

At the very bottom of the agricultural ladder, there is an estimated total of 256,000 so-called fire-field families, who neither own nor lease any land. They are "squatters," living on tracts of ground in the mountains, which they have cleared for cultivation by burning off the forest or brush. Ordinarily such land can be cultivated for only a few seasons.

#### TENANCY INCREASING

Tenancy in Chosen is a centuries-old institution: what is new and disturbing about it is its uninterrupted growth during the past 25 years. This came about chiefly through the loss of ownership in land by the part owners and part tenants and, to a smaller extent, through some loss of land by the cultivator-owners. See table 5. Within the years 1914 to 1938, the total number of farmers increased 11 percent but tenants increased 36 percent, or six times as rapidly. During the same period the proportion of tenants to the total number of farm households increased from 35 to 53 percent. This development, coupled with the concentration of land in the hands of the landlords and the terms under which the land is rented out, spells pauperization for the great majority of Korean farmers.

<sup>13</sup> Miller, Ransford S., American consul general at Keijo, in a report entitled "The Farmers and Farm Lands of Chosen (Korea) in 1928."

TABLE 5. *Farming households in Chosen according to landholding status, 1914-1938*<sup>1</sup>

| YEARS      | LANDLORDS | OWNER FARMERS | PART OWNERS  | FULL TENANTS | TOTAL       |
|------------|-----------|---------------|--------------|--------------|-------------|
|            |           |               | PART TENANTS |              |             |
| 1914 ....: | 46,754    | : 569,917     | : 1,065,705  | : 911,261    | : 2,593,637 |
| 1924 ....: | 102,183   | : 525,689     | : 934,208    | : 1,142,192  | : 2,704,272 |
| 1930 ....: | 104,004   | : 504,009     | : 890,291    | : 1,334,139  | : 2,832,443 |
| 1938 ...:  | -         | : 543,481     | : 814,293    | : 1,511,424  | : 2,869,198 |
| :          | :         | :             | :            | :            | :           |

<sup>1</sup> Data for the years 1914, 1924, and 1930 taken from *Agrarian Problem and Peasant Movement*, published by the International Agrarian Institute, Moscow, 1937, IV: 42. Data for 1938 taken from "Farming Households, Holdings, Ownership and Tenant Status in Chosen," a report prepared by U. Alexis Johnson, American vice consul, Keijo, Chosen, 1939.

A number of factors are responsible for the loss of ownership in land sustained by an increasing number of farmers. There is rise in living expenses without a corresponding increase in income, because of the low productivity of the soil and the primitive methods of cultivation. The fall of prices of agricultural products, results in large deficits, which lead to heavy indebtedness. Farmers are often in no position to discharge these debts except through the sale of their land. Another factor is the Japanese acquisition of large tracts of arable land since the annexation of Chosen.

#### RISE IN LANDOWNERSHIP BY JAPANESE

Exact data concerning the amount of land owned by the Japanese are not available,<sup>14</sup> and the unofficial estimates vary. They are all agreed, however, that a relatively small number of Japanese have succeeded in acquiring a large share of the land. Official data show that at the end of 1927 the total number of Japanese households in Chosen was 10,300, comprising a population of 44,000. By 1936 the latter figure had been reduced to 35,000.

According to one estimate, at the end of 1930 the Japanese owned approximately 1,500,000 acres, or "about 11 percent of the total taxable land area in Korea."<sup>15</sup> On the other hand, "various careful estimates of fair-minded non-government Japanese and Koreans," a student of rural Korea wrote, "place the proportion of land owned, actually or virtually, by the Japanese at anywhere from 12 to 20 per cent. In some counties in the south, Japanese ownership, based on tax records, is said to extend over half of the land. Thus in one county, Ikson, in South Keisho Province, an investigation by a Korean landlord and educator is reported to have shown 32 per cent of the assessed property valuation in the hands of 120,000 Koreans and 63 per cent in the hands of 3,000 Japanese. Since the great part of Japanese-owned land is in the south, it is probably fair to conclude that in this section about one-fourth of the land has passed out of Korean hands."<sup>16</sup>

<sup>14</sup> Latest official figures relate to 1927 and are incomplete

<sup>15</sup> Lee, Hoon K., *Op. Cit.*, p. 148.

<sup>16</sup> Brunner, Edmund de Schweinitz, "Rural Korea," published by the International Missionary Council in the report of their Jerusalem meeting, 1928, p. 105-106.



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One feature of Japanese landownership is that the individual holdings of the Japanese are many times larger than those of the Koreans. The average size of such a holding is difficult to ascertain because of lack of official data and the conflicting nature of private estimates. In addition to the Japanese who are engaged in the actual farming of the land, there are also numerous Japanese and Japanese corporations who own and control what may be called in Chosen large landed estates, worked by tenants. In 1929 there were 538 such individuals or entities, which owned 409,684 and controlled 65,358 acres, a total of 475,542 acres, or an average of 884 acres per owner.

The effect of Japanese infiltration on the fortunes of Korean farmers has been largely negative. Chosen has no free land to spare; the process of land accumulation in the hands of the Japanese (or Korean landlords) is mainly caused by the disposing of native farmers from their land. There have been many cases of replacement of entire Korean village communities by Japanese settlers.

An official survey of colonies made up of "free" or "protected" Japanese settlers revealed that "many of them have replaced Korean villages by driving out Korean peasant farmers. In 1930 there were 61 such colonies where the village is entirely Japanese in the fullest sense."¹⁷ The Korean farmers have been objecting, for instance, to the organization of Irrigation Societies sponsored by the Government-General of Chosen. This attitude stems from a variety of reasons, "but one of the most important factors is that as soon as an Irrigation Association forms in a locality, the petty Korean landowners are not able to hold their land which, on the contrary, falls into the hands of large Japanese landowners and capitalists. This speedy accumulation of land necessarily puts the Korean down into the tenant or landless classes."¹⁸

CONDITIONS OF TENANCY SEVERE

Considering the great predominance of tenant farming in Chosen, it may well be stated that the fortunes of the country's agriculture are closely bound up with the economic status of the tenants. It is pertinent, therefore, to inquire into the terms upon which they rent and work the landlords' land.

Korean tenants pay their rents both in cash and in kind. The latter, however, is the usual method, since 85 to 90 percent of all the tenant households discharge their obligations in this manner. Rentals in kind fall into one of the following three types: Payments of a certain quantity of produce per unit of land, regardless of the size of the crop; payment on the basis of the crop just harvested, or sample threshing; and payment of one-half of the crop - whatever its size. As to the amount of rent actually collected, the maximum may reach as high as 80 percent and the minimum no lower than 20 percent of the crop. For the country as a whole, rentals constitute from 50 to 55 percent of the total yield.

¹⁷ Lee, Hoon K., *op. cit.*, p. 288.

¹⁸ The *Dong-A Ilbo*, leading newspaper in Chosen, Jan. 1, 1932. Quoted by Hoon K. Lee, *op. cit.*, p. 148.

The tenant's net share is considerably below that of the landlord; all expenses connected with the cultivation of the soil, such as human and animal labor, seed and fertilizers, as well as taxes, are supplied by the tenant. There are instances when the landlords, too, pay taxes and carry other charges. The Oriental Development Company, a Japanese large-scale land enterprise, and other Japanese landlords follow that practice, but to compensate themselves "they * * * impose somewhat heavier rent upon their tenants."¹⁹ To this must be added occasional gifts to the landlord and extra charges and services, illegal to be sure, shouldered by the tenant in order to maintain the goodwill of the landlord. It explains why a careful investigation of tenancy conditions in a village in the south of Korea "showed that the renter's actual *net* share was seventeen per cent. - a condition by no means exceptional in that part of the country."²⁰

Both the tenant and the land he cultivates are at yet another disadvantage. In most cases the tenant's lease is for 1 year only, the result being that the tenant turnover at the end of any year is very considerable. In some Provinces, especially in the more fertile southern regions, the replacements have been estimated at about one-third of the total. Where the tenants remain longer on the land and succeed in raising larger crops, the landlords are more likely than not to raise the rent accordingly. Under the circumstances, the tenants cannot be expected to make land improvements even if they had the means of doing so; all their efforts are bent on a maximum exploitation of the land in the course of their brief tenure. The onerous terms under which the tenants till the land are the consequence of scarcity of land and lack of alternative occupations for a growing rural population.

Try as hard as he may, the surplus of a tenant's crop after fixed annual expenses are paid is too small for the maintenance of his family until the next harvest. The lot of the Japanese tenants is notoriously bad, but a Japanese authority wrote that "Corean tenants are poorer than Japanese tenants and their economic condition is much worse than that of tenants in Japan Proper. One is indeed greatly amazed by the low and crude economy of those poor agricultural people in Corea."²¹

The Korean tenants were never satisfied with their lot, but until the early twenties customs and traditions regulating the landlord-tenant relations were sufficient to prevent open conflict and insure relative peace in the village. In the past two decades, however, the life and work of the Korean tenants have become increasingly conducive to discontent. The growing agricultural distress has brought about a sharp change in the attitude of the tenants toward the landlords. The number of disputes has increased by leaps and bounds, namely, from 15 in 1920 to 6,886 in the first half of 1935.²² The causes underlying them were numerous, but the principal ones, in order of importance, were termination of leases, excessive rents, and attempts to raise rents still higher.

¹⁹ Kawada, S., "Tenant Systems in Japan and Corea," *Kyoto University Economic Review*, July 1926, p. 70.

²⁰ Brunner, Edmund de Schweinitz, *op. cit.*, p. 25.

²¹ Kawada, S., *op. cit.*, p. 58.

²² *Tibhii Okean*, No. 3-4, 1937, footnote 5, p. 139. [In Russian.]

ATTEMPTED REMEDIES

Faced with the growing bitterness in the relation between landlords and tenants, the Government-General of Chosen was compelled to take official notice of the situation. It did so by the enactment of the Chosen Tenants Arbitration Ordinance (December 10, 1932), and at a later date (April 10, 1934) by the promulgation of the Organic Regulations of Chosen Prefectural, District and Island Tenant Committees.

The two laws aimed to provide a system for the arbitration of disputes between tenants and landlords. They enable the tenant, as well as the landlord, to request arbitration of a dispute at the local court. Refusal of one of the disputants to appear before the court without proper reasons is punishable with a fine of not more than 50 yen. The decision of the court is binding, unless the parties concerned protest the decision in writing within a specified time limit. In addition, permanent regional tenant committees are created with the power to hear and arbitrate disputes over tenant rents and other matters of tenancy.

These measures help to settle disputes, but they do not touch the causes underlying the conflicts and discontent. The first attempt along these lines was the enactment of the Chosen Agricultural Lands Ordinance on April 11, 1934. The basic features of this measure are expressed in two provisions: First, the term of lease to a tenant shall be 3 years, instead of the usual 1 year, and 7 years in the case of perennial crops, such as ginseng and mulberry; second, restrictions are placed upon the arbitrary actions of the managers of tenant lands. It provides also that agreements in which a tenant waives certain of his rights are illegal (art. 6); that renewals of tenant leases shall be for a similar term as the original leases; and that a tenant may propose a reduction or remission of the rental in case of crop failure (art. 16).

The measure hardly enables the tenant to improve his economic status to any marked degree, but it undoubtedly has given him a greater degree of security through a more permanent employment. Judging by the official report of the Government-General of Chosen, which shows an increased number of disputes presented for court settlement, one gathers that the tenants have taken advantage of the enacted measures. According to the report, 732 cases were presented for arbitration in 1933 and 1,707 in 1934. The enactment of the Agricultural Lands Ordinance, which became effective in October 1934, led to a steep rise in the number of disputes brought for settlement; they jumped to 7,444 in 1935 and to 9,370 in 1936. In the latter year only 386 cases were due to complaints lodged by landlords; in 8,984 instances the complainants were tenants. The latter evidently found the arbitration system quite effective as a means of settling some of their differences with the landlords.

Aside from these measures, the Government-General of Chosen has been engaged in feeble attempts to cure the tenancy problem by assisting tenants to become farmer-owners. A 10-year program was launched in 1932, aiming to create 2,000 farmer-owners yearly. Every tenant selected for this purpose receives a Government loan of 1,000 yen at 4.3-percent interest, to be repaid in 25 yearly installments. The effectiveness of the scheme is questionable for two reasons. First, under the prevailing price of land in Chosen, a tenant could not acquire more than 1.2 acres. The

income derived from the cultivation of so small a holding is not sufficient to provide the farmer with his meager needs at any time, let alone when the land is encumbered with debt. Second, the annual increase in the number of farmer-owners created under the plan would be equal to not more than 3 percent of the yearly rise in tenant numbers. To be effective, therefore, the Government plan would have to be on a much greater scale.

OTHER PROBLEMS

LOW INCOME

It is evident from the above that the income of the majority of Korean farmers is a very meager one indeed. The information on farm income in Chosen is not complete, but data available show what the Korean agricultural situation means to the farmers in terms of earning a livelihood.

An investigation of an agricultural region of the South Keisho Province carried out in 1922 revealed that only 30 percent of the cultivator-owners made a profit at the close of the agricultural year, while the remaining 70 percent broke about even. Only 4 percent of the part tenants and 3 percent of the full tenants closed the year with a profit; 96 percent of the former and 97 percent of the latter wound up with a loss.²³ Two more recent surveys (1931) of two Provinces, summarized in table 6, show approximately the same results. All farmers closed the year with a deficit except the part owners of one Province, who had an average profit of 17 yen. The average income of all types of farms, however, compared with the average outgo of the same farms was short by 44 yen in one case and by 14 in the other.

TABLE 6.—Income and outgo of farmers in two Provinces of Chosen, 1931

| CLASS | TOTAL INCOME ACCORDING TO INVESTIGATION BY- | | TOTAL OUTGO ACCORDING TO INVESTIGATION BY- | | PROFIT (+) OR LOSS (-) ACCORDING TO- | |
|------------------|--|--|---|--|---|--|
| | AGRI- CULTURAL SOCIETY OF CHOSEN | CHOSEN BUREAU OF AGRICULTURE AND FORESTRY | AGRI- CULTURAL SOCIETY OF CHOSEN | CHOSEN BUREAU OF AGRICULTURE AND FORESTRY | AGRI- CULTURAL SOCIETY OF CHOSEN | CHOSEN BUREAU OF AGRICULTURE AND FORESTRY |
| | : Yen | : Yen | : Yen | : Yen | : Yen | : Yen |
| Owner-farmers .. | 679 | : 479.5 | 701 | : 507.2 | -22 | : -27.7 |
| Part owners ... | 392 | : 484.6 | 473 | : 468.0 | -81 | : +16.6 |
| Tenants | 297 | : 397.8 | 327 | : 428.0 | -30 | : -30.2 |
| Average | 456 | : 453.9 | 500 | : 467.7 | -44 | : -13.8 |
| | : | : | : | : | : | : |

The Practical Life, January 1933, IV (1): 22, quoted by Hoon K. Lee, *op. cit.*, p. 272.

²³ Brunner, Edmund de Schweinitz, *op. cit.*, p. 27.

HIGH INDEBTEDNESS, EXORBITANT INTEREST RATES

The only way in which a Korean farmer can cover the disparity between income and expenditure is by contracting a debt; hence, approximately 75 percent of all the farmers are in debt. Estimates of their total indebtedness vary. Before the agricultural depression of the thirties had set in, the debt, according to an official report, amounted to not less than 500,000,000 yen (about \$144,000,000). No figures are available for the subsequent years, but it is safe to assume that indebtedness rose considerably during the years of the depression.

The average debt per household ranges from about 170 to over 200 yen. It is considerably smaller than the 1,000 yen per farm family in Japan; however, it is by no means small when one considers that the majority of Korean farmers operate on what might be called a deficit basis.

✓ The burden of the debt is made heavier by the exceedingly high rate of interest at which it is carried. Incomplete information, covering loans totaling 54 million yen extended to its members by the rural credit societies, shows that 14 percent of all the loans was at 15 percent, while 40 percent carried an interest rate of over 30 percent per annum. Another investigation revealed that the minimum rate for personal loans was 7 percent and the highest 70 percent, the respective figures for mortgage credits are 7 and 40 percent. The average for all types of loans is about 30 percent per annum. The poorest section of Korean rural population pays the highest rates because they have little or no property to offer as security.

Having contracted a debt at such exorbitant charges, many a farmer would find it difficult to extricate himself from the debt entanglement even if the money were utilized for productive purposes. Actually, a great many of these loans are unproductive, being largely devoted to expenditures other than agricultural. For many Korean farmers indebtedness, therefore, spells "loss of land, discouragement, tenancy, greater debts, conditions approaching serfdom, then utter despair and barren stolidity."²⁴ The Government-General of Chosen has undertaken readjustment of farmers' debts by providing them with funds at low interest. "The number thus assisted," an official report stated, "increased six fold and the amount of funds seven fold over the figures previous to this movement [Self-Help Movement inaugurated in 1932]."²⁵ The report does not reveal, however, the size of the special fund, the interest rates at which loans are made, or the number of farmers who actually benefited by it.

FALLING PRICES

The fall of prices in the late twenties and early thirties added to the heavy burdens shouldered by the Korean farmers. As a Japanese colony, Chosen reacts immediately to the economic conditions prevailing in Japan. This is particularly true in the matter of agricultural prices. The price of Korean rice, for instance

²⁴ Uenoda Setsuo "Korean Rural Five Year Plan for Farms Will Likely Succeed" *The Times Pacific*, May 3 1934

²⁵ *Annual Report on Administration of Chosen 1933-34*, p. 196

is determined by the Osaka market quotations. There is this difference to be observed, however: low rice prices in Japan cause a still greater decline in Korean prices because of the urgency with which the farmers must sell their crop at the earliest possible date. The same conditions apply to Korean cocoons.

When prices of agricultural products in Japan began their downward trend in 1926, prices of Korean followed suit. By the middle of 1930 prices of all Korean grain crops had declined 20 percent, and those of polished rice 28 percent; by October 1932 the respective figures were 39 and 43 percent. The total value of the principal agricultural products declined from 709 million yen in 1928 to 494 million yen in 1931, a reduction of 30.3 percent. That these developments played havoc with Korean agricultural economy is generally conceded.

SELLING CHEAP, BUYING DEAR

An additional factor aggravating the agricultural situation was the price disparity between manufactured and agricultural products. The general commodity price level declined during the depression, but to a smaller extent than prices of agricultural products. The price of such indispensable farm items as chemical fertilizers not only failed to decline but registered a new high. Taking 1925 as a base, the index number of the price of this product was 119 in 1930 and 122 in 1934.

The situation may be well summed up in the following words: "Grains and rice are produced and sold by farmers, while most of the general commodities are produced in Japanese factories and sold to farmers. Accordingly, the farmers in Korea have been in a disadvantageous position. They have been paying more and receiving less; their conditions of life are becoming harder."²⁶

FARM RELIEF

The plight of the Korean farmers goes back to predepression years: the late twenties and early thirties only served to accentuate a notoriously bad situation. Prior to 1932 the Government-General of Chosen took little or no notice of the farmers' difficulties, but by 1932 it became evident even to the powers-that-be that something, other than encouragement to produce larger crops in which Japan was particularly interested, had to be given to the farmers in order to relieve their distress. It is of interest in this connection to note the causes, as seen in official quarters, underlying the difficulties.

The Government-General of Chosen stated that "this miserable condition of affairs was due partly to the unconscious indifference of the farmers themselves and largely to the absence of governmental economic and educational provisions, as well as to the defective social organization, environment and lack of guidance."²⁷ In fact, it insists throughout that the farmers, more than any other element, must shoulder the blame for whatever ills have befallen them. This is so, because.

²⁶ Lee, Hoon K. *op. cit.*, p. 266.

²⁷ *Annual Report on Administration of Chosen 1933-34*, p. 191.

according to the official version, "in more recent years the farmers, carried away by the rush of material civilization, have lost any idea of self reliance and have forgotten the real character and true pride of farming communities, in joining the ill-advised pursuit of 'money economy,' deluded by the current idea of capitalism, worship of all powerful cash, and the supremacy of city life. Thus they have urged on their impoverishment."²⁸

These views played a decisive role in the remedial measures adopted by the Korean authorities. Assistance through work-relief projects was considered, and expenditures for public-works programs increased from 7 million yen in 1931-32 to 13 million yen in 1936-37. The budget figure for 1937-38 shows a high of 32 million yen, declining to 19 million yen in 1938-39. The exact sum spent in the past 2 years has not been indicated. But in the main the emphasis was upon a cure through the farmers' own efforts. "To rescue the rural villages definitely," the official report continues, "and to see the farmers emerge with vigorous energy there remains the sole means - the Self-Help Movement - by which the farmers are urged to plan and work out their own salvation. Believing this an infallible and popular plan for the regeneration of Chosen, the Government-General, since 1932, has been encouraging and guiding the farmers in its practice."²⁹

An attempt to clarify the nature of this very vague programmatic statement was made in 1933, when the Government-General issued instructions to the Provincial officers "for the practical guidance and operation of the 'Self-Help' Plan."³⁰ From these one learns that "(1) Guidance should stress the mental awakening and self reliance of the farmers, in preference to urging them to material progress * * * (2) Every year in each 'Yu' and 'Men' [small administrative units] one or more villages should be selected in which the living conditions of each family should be investigated and guidance given toward a new practical plan of family life, material as well as mental, covering a period of five years. (3) The intent of this plan will be (a) to meet the usual shortage of food and to rescue the farmers from 'spring famine,' (b) to maintain a balance between the annual cash income and disbursements, (c) to readjust and repay the harrowing debts."³¹ But how could all this be accomplished in the light of the meager resources of the Korean farmers? The answer was that "a government subsidy should be granted dependent on the progress of the mental awakening of the farmers and the development of their new life plans."³²

According to the same official source, the actual working of the Self-Help Plan brought considerable benefits to the farmers. Examples were cited showing that, whereas at the beginning of 1933 out of 55,522 families selected from 1,988 villages 31,581 suffered from food shortage, at the end of the year the number of such families was reduced by 6,939; before the movement came into being, 43,329 out of the 55,522 families averaged a debt of 115 yen per farm, but in the course of the year they were able to reduce the individual debt by 25 yen; also, the rate of tax collection increased by 2 percent, and "(c) the Savings deposited in the Local Credit

²⁸ *Ibid.*, pp. 191-192.

²⁹ *Ibid.*, p. 193

³⁰ *Ibid.*, p. 194

³¹ *Ibid.*, p. 194.

³² *Ibid.*, p. 194

Associations increased by 20 percent. in Shares and by 17 per cent. in Cash, while the arrears of payments decreased by 20 percent. (d) The Postal Savings increased by 10 per cent. in number of depositors and by 22 per cent. in amount."³³

The actual increase both in savings and in deposits is not indicated. But whatever the size of the sum or the number of families relieved from the usual "spring famine," it is not clear to what extent the policy of self-help was responsible for these results. Even the so-called practical, detailed instructions on how to promote the Self-Help Movement are only vague generalizations against which results can hardly be checked. The better prices that prevailed in 1933 (and in the subsequent years) as compared with those of the immediately preceding years might have been the direct cause of certain improvements.

Furthermore, the official claims deserve careful scrutiny because of the tendency to see beneficial results where few are in evidence. From the official point of view, for instance, a cause for gratification is that "the consumption of Rubber Shoes decreased by 5.9 per cent."³⁴ Decreased consumption of this type of commodity does not mean that the Korean farmers shifted to better-quality leather shoes; on the contrary, it indicates a shift to the poorest quality shoes - straw shoes produced by the farmers themselves. This is characteristic of a type of self-sufficiency that feeds on a lower rather than a higher standard of living.

The kind of assistance exemplified by the Self-Help Movement proceeds from the assumption that, basically, there is little the matter with Chosen's agriculture. "The future of these communities," we are assured, "should not be regarded with pessimism. Agriculture is favoured with good soil, good climate, and abundant labour. With the study of land productivity and the adaptation of farming methods, the yield can readily be doubled."³⁵ This statement is charged with an undue degree of optimism. The plentiful supply of labor is synonymous with a surplus farm population, finding no outlet for profitable employment; the soil is considered inferior to that of Japan, the land reserve fit for cultivation is small indeed, and there is no evidence that the yield could "readily be doubled."

CONCLUSION

Reviewing Chosen's agricultural development since the country's occupation by Japan, one observes, on the one hand, considerable expansion of production and, on the other hand, the worsening of the economic conditions of the masses of Korean farmers. The benefits of enlarged acreage and augmented production seem to have eluded the very people whose efforts made them possible.

The salient features of the seemingly paradoxical situation in Chosen are as follows: A cash income ranging from 50 to 100 yen per family; an insufficient

³³ *Ibid.*, p. 195

³⁴ *Ibid.*, p. 195

³⁵ *Ibid.*, p. 192


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food supply that spells hunger for considerable groups of farmers, coincidental with large exports of food products to Japan; indebtedness at usurious rates, by which four-fifths of the farmers are harassed; ever-increasing decline in landownership and consequent swelling of the ranks of tenants. All this was well epitomized by a Japanese writer, who stated that "the lot of the Korean farmer is as miserable as ever it was, a fact that explains why the Government-General, despite all its efforts on behalf of Korea, is not unqualifiedly popular."<sup>36</sup>

In Chosen, as well as in a number of other Oriental countries, the inherent problem of a growing population pressing upon a limited arable acreage is responsible in a large measure for many of the difficulties mentioned above. They are accentuated, however, by Japanese economic policies relating to Chosen. Japan succeeded in turning Chosen into an ample source of raw materials, primarily foodstuffs, for which the former was greatly in need. In return, Japan supplied Chosen with manufactured products. This is a familiar colonial policy motivated mainly by the specific needs of the "mother country," in this case Japan, rather than by those of the colony.

The more recent very ambitious cotton-production plan is yet another illustration of this policy. It is quite possible that the cotton program will benefit the farmers, but it must be noted that the expansion of acreage under cotton springs from Japan's desire to lessen the dependence of its textile industry upon foreign cotton. If this development should bring any advantage to the Korean farmers, it will be purely incidental to the main aim.

In the strenuous efforts made by the Government-General of Chosen, to increase agricultural output, the immediate problems affecting the lives of the farmers were lost sight of until it became evident "to all those interested that it is of vital necessity to retrieve the rural communities from entire collapse."<sup>37</sup> The measures to combat this situation were not commensurate with its gravity. The attempts to scale down indebtedness, to arrest the growth in the number of landless farmers, to prevent the concentration of land in fewer hands, and to create a strong group of owner-cultivators were quite ineffective.

These are admittedly difficult problems to solve, but their solution is not brought nearer when, as Korean authorities maintain, the real cure lies in spiritual regeneration, self-reliance, mental awakening, and the like. At best such measures could alleviate but slightly the plight of Korean farmers. Even the Japanese farmers who have the qualities that the Koreans supposedly lack, failed to escape a goodly share of the ailments besetting the Korean farmers. The farmers of Japan were in no position to improve their economic status without considerable financial aid from the State; to a greater degree the same holds true of the Korean farmers.

To give the land back to the farmers or to arrest the process of growing tenancy, the Government would have to render them financial assistance on a large

<sup>36</sup> Muto, Yoichi *op. cit.*, p. 210.

<sup>37</sup> *Annual Report on Administration of Chosen, 1933-34*, p. 192

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scale, as well as introduce basic remedial legislation. Such measures, together with a greater emphasis on industrialization of the country, toward which a substantial beginning has already been made, might help to reduce considerably the distress in the Korean country-side.

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BRITISH PRICE POLICY AND PRICE DEVELOPMENTS IN WARTIME

By Harry L. Franklin*

Public interest becomes focused on prices and price policy to an unusual degree in wartime, inasmuch as the welfare of virtually every individual is directly involved therein. And the socio-economic groups - agricultural, labor, industrial - are likewise vitally affected by the price policy and by the price-control measures that the state adopts in wartime as national security measures. The significant features of the British price policy and the development of prices since the outbreak of the present war are discussed in this brief article.

MAIN FEATURES OF BRITISH PRICE POLICY

Avoidance of the tremendous rise in the cost of living that occurred during the World War is one of the chief objectives in the United Kingdom's price policy during the present conflict. This involves control by the Government of the prices of all essential raw materials and important foodstuffs. It is the policy of the Government to select as basic prices those obtaining during a specified period (depending on the product) in August 1939 shortly before the outbreak of hostilities. These prices are increased from time to time as additional costs make necessary, such as war-risk insurance, higher freight rates, wage increases, rise in international commodity prices, and sterling depreciation.

Price control, chiefly in the form of specified maximum prices, is coupled with Government control over stocks and supplies of virtually all essential raw materials and principal foodstuffs and with the licensing of dealers in such commodities. By virtue of its position as a leading customer in wartime, the Government, through its control over the prices and profit margins received by industry for all manufactured and semimanufactured goods delivered to public authorities, exercises a very strong influence on price policy and the general price level.

In addition to these direct controls, designed, among other things, to prevent profiteering and abnormal price rises, it may be pointed out that the Treasury exercises considerable influence on the prevailing price level through its general monetary policies, the allocation of foreign exchange, and the initiation of taxation proposals. In this connection, one of the chief aims of the Treasury, and of the Government in general, seems to be the prevention of inflationary movements, or at least the maintenance of such trends within reasonable limits.

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FOOD PRICE POLICY

Thus far the Government's policy of maintaining food prices at reasonable levels seems to have been fairly successful. The price regulations seem to have been well maintained under the scrutiny of some 1,400 local Food Control Committees throughout the country. The availability of adequate foodstuffs at reasonable prices is, of course, a factor of paramount importance in maintaining the national morale in wartime.

More than 2 years ago the then Food (Defense Plans) Department announced that one of the chief aims in wartime would be to insure the supply of essential foodstuffs at such prices as would meet the requirements of all types of consumers in all parts of the country. Beginning with the outbreak of the present war or shortly thereafter, maximum permitted prices (wholesale and retail) were established by the Government for most of the important foodstuffs, such as cereal products, bacon and hams, certain other meat, imported lard, butter, eggs, sugar, dried fruits, and potatoes.¹ Many changes in the maximum permitted prices then established have in the meantime been made by the Ministry of Food, owing to new conditions, customary seasonal advances, and so on.

In order to prevent further increases in the retail cost of foodstuffs, the Government is spending about £1,000,000 (\$4,000,000) per week, according to an announcement in Parliament on January 31, 1940, by the Chancellor of the Exchequer. Maintenance of the price level for bread, flour, meat, and milk accounts for the bulk of the weekly expenditure mentioned. This policy of the Exchequer's bearing the loss involved in maintaining the prices of staple food products against undue increase was adopted at the beginning of December. It is calculated to benefit wage earners and those with small fixed incomes, through what amounts to a consumer subsidy but the Chancellor of the Exchequer pointed out that it might not be possible to continue this policy in all circumstances.

PRICES TO FARMERS

It is the policy of the Government to insure British farmers a fair return for their output. The Minister of Agriculture announced in Parliament on October 9, 1939, that the Government would buy the whole of staple crops sold off farms from the 1940 harvest at prices to be fixed in the light of prevailing circumstances. Farm prices will be fixed from time to time at fair levels, taking into account the changes in the cost of production and permitting reasonable returns. Producers' fixed prices for hogs, sheep, millable wheat, and potatoes have been revised upward, several times in some instances, since the outbreak of war.

Domestic farm output accounts for about 35 percent only of the United Kingdom's total food requirements, but the Government plans a substantial increase in production through the diversion of some 2 million acres of grassland into arable crops. In this regard the Minister of Agriculture in a Parliamentary speech on

¹ For comprehensive data, see the article "British Food Control" in *Foreign Agriculture*, December 1939.

December 14, 1939, said, "The Government recognize that if the desired increase in home production is to be secured, a higher level of prices will be necessary for agricultural products generally." He pointed out, however, that "naturally we must avoid extravagant or uncontrolled prices such as occurred in the last war. They * * * eventually brought disaster for agriculture." And early in the present war he emphasized, in a message to the National Farmers' Union, that it was in the general interest to prevent, so far as possible, the vicious spiral of rising costs, rising prices, and rising cost of living.²

British farmers' costs have increased substantially since the outbreak of war, and the upward trend will likely continue. The prices of feedstuffs and fertilizers are higher, and farm wage rates have increased in most parts of Great Britain. These trends foreshadow higher prices for farm products if the present price policy is maintained.

PRICES OF ESSENTIAL RAW MATERIALS

The Government's price policy in relation to industrial raw materials is similar to that applying to foodstuffs; namely, the prevention of profiteering and the maintenance of prices at the level immediately preceding the present war, plus the additions necessitated by changes in the meantime. These changes are, for the greater part, higher shipping costs, commodity war-risk insurance, sterling depreciation, and higher world market prices for imported materials of non-Empire origin.

Fourteen Commodity Controls, applying to as many commodities or commodity groups of industrial raw materials, have been established under the authority of the Ministry of Supply for controlling prices, supplies, and distribution. The major groups or products involved are iron and steel, nonferrous metals, aluminum, hemp and flax, silk and rayon, jute, wool, hides and skins, leather, paper, timber, ammonium sulphate and other fertilizers, sulphuric acid, and molasses and industrial alcohol. Cotton, rubber, and tin, however, are among the commodities for which "free" or uncontrolled prices have thus far obtained. Price revisions of the "controlled" commodities have been frequent, and the control system, on the whole, seems to have been sufficiently flexible to avoid friction and irritation, which would have been inevitable in a more rigid system.³

THE PRICES OF GOODS ACT, 1939

In order to protect the public against unwarranted increases in the retail prices of certain staple articles, the Prices of Goods Act, 1939 was enacted on November 16.⁴ The articles involved will be specified in orders issued by the Board of Trade from time to time. The permitted price must not exceed the "basic" price obtaining on August 21, 1939, plus the amount justified by the unavoidable increases

² "British Farming in Wartime - Price Control," *The Statist* (London), January 13, 1940.

³ "The Commodity Markets - Success of Control," *The Statist*, December 30, 1939.

⁴ 2 and 3 Geo. 6., Ch. 118.

in costs and expenses since that date for the specified article. These permitted extra costs are set forth in detail in a schedule to the act and include additional price of materials, higher wages and salaries, war-risk insurance premiums, and increased transport and advertising charges. The act, however, does not involve any basic changes in the existing retail trade set-up.

The act will be administered by a Central Price Regulation Committee through the medium of local Price Regulation Committees. Complaints of price infractions will be investigated by the local committees and, if prosecution is considered necessary, the matter will be reported to the Central Committee and then to the Board of Trade. The Board of Trade will decide whether to institute public prosecution. The penalties for violation of the act are fairly severe. The Prices of Goods Act does not apply to food products, inasmuch as price supervision in this field is exercised by the local Food Control Committees and other agencies under the Ministry of Food.

In the first order issued by the Board of Trade specifying price-regulated articles, effective January 1, 1940, is listed a wide range of articles of clothing, dress materials, household textiles, domestic hardware, table cutlery, domestic glassware and pottery, electric flashlights and accessories therefor (including batteries and bulbs), and sand bags. Both the new act and the first order issued thereunder are intended to provide a channel of protest and complaint for honest resentment against excessive prices. How well the procedure will work in actual practice remains to be seen.⁵

PRICE DEVELOPMENTS SINCE AUGUST 1939

Wholesale prices of all articles in the United Kingdom averaged an increase of approximately 23 percent during the first 4 months of the present war, according to the monthly index prepared by the Board of Trade. For the group "food and tobacco," the increase was almost 33 percent during this period (September through December), and for "industrial materials and manufactures" a rise of 18.5 percent was registered.⁶ Table I indicates month-by-month percentage increases and the aggregate increase over August 1939.

FOOD AND TOBACCO

Cereal prices in the aggregate had declined almost without interruption from the beginning of 1933 to August 1939. The average rise in cereal prices of 20.1 percent in September, however, following the outbreak of the war, was larger than for other foods. Increases the following 3 months were considerable for most of the cereals, but not so large as in September. An exception was straight-run flour, for which the control price was unchanged.

⁵ *The Economist* (London) December 30, 1939.

⁶ The data herein relating to wholesale price index numbers in the United Kingdom is from the *Board of Trade Journal*, issue of January 11, 1940.

TABLE 1.—Percentage increases in British wholesale price indexes,
September–December 1939

| GROUP | INCREASE OVER AVERAGE OF PREVIOUS MONTH IN- | | | | INCREASE OVER AUGUST AVERAGE IN DECEMBER | |
|---------------------------|---|-----------|-----------|-----------|---|--|
| | SEPTEMBER | OCTOBER | NOVEMBER | DECEMBER | | |
| | : Percent | : Percent | : Percent | : Percent | : Percent | |
| Cereals | 20.1 | : 8.1 | : 13.2 | : 9.3 | : 60.7 | |
| Meat, fish, and eggs ...: | 10.3 | : 4.7 | : 3.3 | : 4.3 | : 24.4 | |
| Other food and tobacco .. | 7.8 | : 10.4 | : 1.7 | : 0.7 | : 21.8 | |
| Total food and tobacco: | 11.9 | : 8.1 | : 5.4 | : 4.2 | : 32.9 | |
| Coal | 1.6 | : 2.9 | : 2.9 | : 1.0 | : 8.6 | |
| Iron and steel:1 | 0.4 | : 1.4 | : 8.7 | : 0.4 | : 10.3 | |
| Nonferrous metals | 3.7 | : 0.5 | : 0.1 | : 7.7 | : 12.3 | |
| Cotton and products | 21.5 | : 4.2 | : 3.4 | : 14.8 | : 50.4 | |
| Wool and products | 5.1 | : 8.3 | : 8.6 | : 3.5 | : 27.9 | |
| Other textiles | 9.9 | : 10.2 | : 8.8 | : 4.7 | : 37.9 | |
| Chemicals and oils | 0.9 | : 4.7 | : 4.3 | : 3.0 | : 13.4 | |
| Miscellaneous | 9.9 | : 2.7 | : 4.7 | : 0.3 | : 18.4 | |
| Total industrial | : | : | : | : | : | |
| materials and | : | : | : | : | : | |
| manufactures | 5.4 | : 3.4 | : 5.9 | : 2.6 | : 18.5 | |
| Total all articles | 7.6 | : 5.0 | : 5.7 | : 3.2 | : 23.2 | |
| | : | : | : | : | : | |

¹ Decrease.

Meat, fish, and egg prices advanced 10.3 percent in September, or about one-half as much as cereal prices, and the monthly increases thereafter were much less. Bacon and ham prices advanced in October and November, when seasonal increases for eggs were also recorded. Prices of home-produced meat advanced as usual in December, but the rise for pork was exceptional.

In the miscellaneous food and tobacco group, substantial price rises occurred in September and November for imported butter and cheese. Seasonal variations in the prices of fruits and vegetables, which may have been increased by war conditions, were important. Two substantial increases were due to the increased duties (or excise) imposed late in September on sugar and tobacco equivalent to about 33 and 15 percent ad valorem, respectively. Tea prices were controlled, but coffee and cocoa prices advanced sharply in September, with a further rise for cocoa in December.

INDUSTRIAL MATERIALS AND MANUFACTURES

The heaviest price increases were for industrial materials and manufactures in the textile groups, as may be seen from table 1. For cotton and cotton textiles the increase from September through December was 50.4 percent over the August average, while that for the other two textile groups ("wool and products" and "other textiles") was 27.9 and 37.9 percent, respectively. Most of the increase in the cotton and cotton-textile group occurred in September and December; that for the

wool group, in October and November. The increases in "other textiles" in September and October were largely due to sharp rises for silk and hemp, and in November and December to jute price advances.

Coal registered the smallest total price increase (8.6 percent) for the first 4 months of the present war of any of the eight commodity groups under discussion, with the iron and steel group next (10.3 percent). Prices of the latter group were mostly unchanged until November. Among chemicals and oils, price increases were notable for palm-kernel oil, coal-tar products, and fuel oil. In the miscellaneous group, price advances were recorded for rubber, timber, hides and skins, and paper-making materials.

CERTAIN IMPORTED MATERIALS

The United Kingdom draws a large proportion of its industrial raw materials and certain foodstuffs from overseas sources. In order to illustrate further the trend of British wholesale prices during the first 4 months of the present war, the following table of price quotations has been compiled from various issues of *The Economist* (London), for some of the important overseas commodities.

For most of the commodities listed in table 2, it may be noted that the price increases registered during the first 4 months of the present war have been greater than the increase in the wholesale price index for industrial materials and manufactures shown in table 1.

TABLE 2.—British wholesale prices for selected commodities from overseas sources, December 29, 1939, with comparisons¹

| COMMODITY | UNIT | 1939 | | | | 1938 | |
|--------------------------|--------------------|----------|-----------|----------|----------|-----------|-----------|
| | | Aug. 30 | Sept. 27 | Oct. 31 | Nov. 28 | Dec. 29 | Dec. 28 |
| Rubber, smoked sheets .. | Pound | 8.75d. | 9.75d. | 11.25d. | 11.19d. | 11.63d. | 8.19d. |
| Cotton, raw, American : | | | | | | | |
| Middling | do. | 5.49d. | 6.77d. | 6.26d. | 7.6d. | 8.78d. | 5.22d. |
| Wool, tops 64's | do. | 25.5d. | 26.5d. | 31.75d. | 31.75d. | 31.75d. | 25d. |
| Jute, Daisee 2/3 | Ton | £21:17:6 | £30 | £33 | £42 | £49:10:0 | £18:17:6 |
| Silk, Japan | Pound | 13s. | 12s.8d. | 18s.6d. | 18s.3d. | 22s.9d. | 8s. |
| Tin, Standard | Ton | £230 | £229:10:0 | £230 | £230 | £247:15:0 | £215:10:0 |
| Lead, soft foreign | do. | £16 | £16:12:6 | £16:12:6 | £16:12:6 | £25 | £14:17:6 |
| Mercury | Flask ² | £16 | £26:17:4 | £27:2:3 | £27:7:3 | £37:6:3 | £15:4:0 |
| Hides, wet salted, : | | | | | | | |
| Australian | Pound | 4.5d. | 4.75d. | 7.75d. | 6.5d. | 6.75d. | 4.38d. |
| Rosin, American | Ton ³ | £19 | £19 | £27:10:0 | £25 | £25 | £14:10:0 |
| Shellac, TN, orange ... | Cwt. | 36s. | 57s. | 57s. | 64s. | 88s. | 39s. |
| Turpentine | do. | 50s. | 50s. | 57s. | 60s.6d. | 59s.6d. | 33s.9d. |
| Cocanut oil, crude ... | Ton | £16:10:0 | £16:10:0 | £22:2:6 | £22:2:6 | £22:2:6 | £15:15:0 |
| Cottonseed oil, crude .. | do. | £16:10:0 | £16:5:10 | £23 | £26 | £26 | £19 |
| Coffee, Costa Rica | Cwt. | 62s. | 92s. | 95s. | 92s. | 92s. | 60s. |
| Cocoa, Accra | do. | 22s. | 29s. | 27s. | 31s. | 34s. | 21s.6d. |

¹ Average wholesale price in the customary United Kingdom market for the date indicated.

² Of 76 pounds.

³ 112 pounds.

WAGES AND COST OF LIVING

Owing to the increase in the cost of living since the present war began,⁷ there have been fairly widespread wage increases, which, in turn, have further contributed to price increases. At least 2 million workers were affected by the wage increases in September and October, and it is estimated that at least as many more are included in the increases subsequently granted in the building, furniture, and textile trades and in numerous miscellaneous industries. There is fairly widespread discussion in the United Kingdom of this situation and the adverse effects to be anticipated of an accelerating spiral of wages and prices.⁸

In fact, attention was directed toward the dangers of inflation, if the recurring spiral of wage increases and price advances was not checked, in the Parliamentary statement of the Chancellor of the Exchequer on January 31, 1940, in which it was pointed out that the Government was spending about £1,000,000 (\$4,000,000) per week to check rises in food prices, a policy in effect since December 1, 1939.

The retail prices of the majority of foodstuffs seem to have risen by less than 10 percent during September-November 1939, or considerably less than the general rise in wholesale prices for foodstuffs during the same period, according to a survey by *The Economist*,⁹ from which the following tabulation was taken. This represents a somewhat smaller increase than the general increase in the cost-of-living index for the same period.

| I. Increase exceeding 20 percent | | III. Increase of less than 10 percent | |
|--|---------|---------------------------------------|---------|
| | Percent | | Percent |
| Bacon | 28 | Beef U K | |
| Fish | 24 | Ribs | 5 |
| Sugar (granulated) | 49 | Thin flank | 9 |
| Butter, salt | 23 | Beef, chilled, ribs | 8 |
| Eggs | 44 | Mutton, U.K., legs | 5 |
| | | Mutton, frozen, legs | 7 |
| II. Increase between 10 and 20 percent | | Flour | 3 |
| | Percent | Bread | 3 |
| Beef, chilled, thin flank | 14 | Tea | 5 |
| Mutton, U.K., breast | 10 | Milk | 3 |
| Mutton, frozen, breast | 15 | Margarine | 2 |
| Cheese | 18 | Potatoes | 3 |

^a Rise partly due to increased tax.

A large share of the rising industrial activity in recent months has been devoted to the production of war materials, without a parallel increase in consumers'

⁷ While the official index shows a rise in the cost of living between September 1 and December 1, 1939, of only 10 percent, this does not adequately reflect the actual increase inasmuch as the index is based on purchasing habits before the last war (1914-100).

⁸ "Wages and the War Effort," *The Economist* (London), December 16, 1939, and the *Manchester Guardian*, January 8 and 10, 1940.

⁹ January 20, 1940.

goods to meet the enlarged total demand from labor.¹⁰ At the same time, every effort is being made in Great Britain to maintain or possibly expand export markets in neutral countries. Moreover, enormously increased demand for war materials will doubtless occur if Germany actually embarks on the repeatedly threatened "total" war against the Allied powers. This would necessarily exert a strong influence on the British price and wage levels.

¹⁰ The *New York Times*, February 3 and 4, 1940.